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# AMERICAN VETERINARY REVIEW.

EDITED AND PUBLISHED MONTHLY BY

Prof. A. LIAUTARD, M.D., V.M.,

*Member of the Central Society of Veterinary Medicine (Paris).*
*Honorary Fellow of the Royal College of Veterinary Surgeons (England).*
*Foreign Corresponding Member of the Academy of Medicine Bruxelles (Belgique).*

Prof. ROSCOE R. BELL, D.V.S., AND ROBERT W. ELLIS, D.V.S.

WITH THE COLLABORATION OF

Prof. W. J. COATES, M.D., D.V.S., New York-American Veterinary College.
Prof. O. SCHWARZKOPF, D. V. M., U. S. Army, Camp Statsenburg. Philippine Islands.
Prof. W. L. WILLIAMS, V. S., President New York State V. M. Society, Ithaca, N. Y.
Prof. S. STEWART, Kansas City Veterinary College, Kansas City, Mo.
M. H. MCKILLIP, M.D., V.S., of McKillip Veterinary College, Chicago, Ill.
WM. HERBERT LOWE, D. V. S., Pres't. N. J. State Board Vet. Med. Ex., Paterson, N. J.
Prof. M. H. REYNOLDS, University of Minnesota St. Anthony Park, Minn.
WM. H. DALRYMPLE, M.R.C.V.S., Veterinarian Louisiana Ag. Exp. Sta., Baton Rouge, La.
D. ARTHUR HUGHES, PH. D., D. V. M., Veterinary Inspector Commissary Dept., U. S. Army, Army Building, Omaha, Neb.
Prof. LEONARD PEARSON, Dean Vet. Dept., University of Penn., etc., Philadelphia, Pa.
L. A. MERILLAT, V. S., Chicago Veterinary College, Chicago, Ill.
D. E. SALMON, D.V.M., former Chief U. S. Bureau of Animal Industry, Washington, D. C.
Prof. VERANUS A. MOORE, New York State Veterinary College, Ithaca, N. Y.
RICHARD P. LYMAN (Harvard), Sec'y A. V. M. A., Hartford, Conn.
C. J. MARSHALL, V. M. D., Sec. Pa. S. V. M. A., Philadelphia, Pa.

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ROBERT W. ELLIS, D.V.S.,
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*Communications for publication or in relation thereto, should be addressed to*

ROSCOE R. BELL, D.V.S.,
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# AMERICAN VETERINARY REVIEW.

NOVEMBER, 1906.

## EDITORIAL.

### EUROPEAN CHRONICLES.

PARIS, FRANCE, Sept. 20, 1906.

OXYGEN GAS IN PRACTICE.—The works of Metchnikoff, of Bordet and Massard have very largely contributed to discredit the antiseptic method in favor of the aseptic. Indeed, they demonstrated that the organism was sufficiently powerful to resist all germs, providing this animal organism was not in a debilitated condition nor the number of the germs too great. Unfortunately the first condition is often realized by the antiseptics, which are applied upon wounds of operation: the phagocytar influence is compromised and it is probable that the phenomena of chimiotaxy, factors of the vitality of the elements, are also interfered with. From these new ideas the aseptic method was generalized. Difficult to apply in human surgery, it is still more so in veterinary, and it is of the greatest importance that the smallest number of microbes or germs possible be allowed to enter wounds, at the same time keeping the wounded elements in the best condition to exercise their destroying power upon them. The first condition can be realized by sterilization of the region with the aid of the already known various means at the disposal of surgeons; care of the parts, of the instruments, of the hands of the operator, and everything coming in contact with the wound.

To fulfil the second condition consists in stimulating the

vital activity of the elements, situated around the traumatism, so that the germs that were left or had still been introduced into the wound, might be destroyed by the natural protectors of the tissues.

This will be done by the action of *oxygen*, says Prof. Hendrickx in the article which he has published in the *Annales de Bruxelles* and which is headed "The Use of Oxygen Gas in Veterinary Surgery," in which he says: "This gas, whose salutary action has been observed for a long time, increases in a noticeable manner the activity of the protoplasm; it constitutes an indispensable element for the production of organic energy, besides having positive chimiotaxic properties, which are incontestable. Besides this, it is a mortal enemy of anærobes, and if its action is less active upon ærobes, it nevertheless reduces their virulency."

Therefore, by these considerations, it is certain that oxygen has a double action, destroying or reducing the microbian virulency and stimulating the cellular activity, which is manifested by an exaggerated phagocytose.

* * *

The important question then is: How can oxygen gas be used? The Professor answers as follows: "We have no hesitation in saying that in our day every practitioner, even those who practice in the country, are bound to use this therapeutic agent. Anyhow the required apparatus is not very complicated. A large glass jar, big enough to contain about thirty litres of gas under pressure and having a metallic cork to which by special arrangement a rubber tube could be attached. On this tube the point of a syringe of Pravaz can be secured. A turn of the cork lets the gas escape. As in all large cities, the jar, once emptied, can be filled again, there is consequently no trouble in having the gas on hand." By this method, the Professor has used the gas on several occasions, and he has recorded two cases where he has obtained excellent results.

In a first case, a fistulous withers of long standing, with extensive disease of tissues, a free incision allowed the removal

of much gangrenous and necrotic tissues and exposed the spinous process of one of the vertebræ. When that was done and the wound well cleaned with a solution of oxygenated water at 50 per cent., the hæmorrhage being stopped and the wound closed with a few stitches, the needle of Pravaz was introduced into the tissues surrounding the wound in various places and a number of insufflations of oxygen made in them so as to give rise all over the part to a large oxygenated emphysema. This was soon resorbed, after 36 or 48 hours. The next day, the wound looked rosy and healthy. Another washing with oxygenated water was made the next day, and this treatment was kept up until cicatrization was complete—that is, for twenty days. At no time was there any suppuration.

A similar success was obtained in a case of penetrating wound of the sesamoid sheath at the inner side of the right hind fetlock of a horse. In a week the animal was able to stand on his leg and the recovery was complete in no time.

* * *

Certainly the good results that are here recorded are sufficient to have the use of oxygen gas enter daily surgical veterinary practice. And, in fact, all our friends remember the success that they have obtained with that preparation, the peroxid of hydrogen, successes that are recorded in several volumes of the REVIEW. Of late we have had less occasion to publish more. Why? Is it that they are too well known? Perhaps! At any rate, if its advantages as an external application are well known, it is not as well with its internal use. This is a subject that is studied here.

At one of the meetings of the Société Centrale, Mr. Desoubry informed his colleagues that he had been making a number of experiments on the effects of intravenous injections of oxygenated water, and from what he has observed he is certain that those injections were absolutely harmless and that the dog could support quite elevated doses without being seriously disturbed. For instance, a dog, weighing 12 kilogs., received 20 c.c. of gaseous water, then gradually increasing to 40 c.c. At first he

seemed seriously affected: respiration was accelerated, he defecated freely and had great difficulty to walk; it required great efforts to prevent its falling. However, after five minutes all these effects had disappeared, and in the evening the dog ate its meal with a great appetite. In the horse Desoubry has given with impunity, twice a day for a time varying between four and six days, as much as 10 c.c. in the jugular vein, without observing the slightest disturbance. Mr. Desoubry continues his experiments and we will hear more on this interesting subject later on.

* * *

HEREDITARY TRANSMISSION OF TUBERCULOSIS.—The possibility of the transmission of tuberculosis by a tuberculous father, considered to the breeding point of view, has been the subject of an important article in the *Berliner Tierärztliche Wochenschrift* from the pen of Dr. Richter, of the Veterinary School of Dresden, which has been translated in the *Revue Vétérinaire* of Toulouse, and which I may be allowed to resume:

This transmission might occur in several ways:

(1) By the transmission of the tuberculous bacillus to the fœtus;

(2) By the infection of the mother;

(3) By the transmission of the predisposition.

* * *

Baumgarten has been the principal promotor of the hereditary transmission of the tuberculous bacillus. All other modes of infection are pushed to the second plan, the greatest part belonging to the bacillar transmission only. Baumgarten explains, by the theory of latent infection, the much less frequency of tuberculosis in the first part of life than in a more advanced age. He admits that the bacilli remain inactive, without producing disturbance, until by an impulse of some kind, early or late, they develop their injurious action. To appreciate those views of Baumgarten, it is necessary to establish that the passage of the bacilli can take place in two manners: through the maternal or the paternal organism. For the first, proofs are

many and have been demonstrated by Johne, Csokor, Misselwitz, Bang, Lucas, McFadyean, Nocard, etc., etc. Baumgarten and his students admit at present a *germinative* transmission—that is, an infection of the egg by the bacilli contained in the sperm. Johne also says that "one must admit without restriction the *possibility* of a congenital parasitar heredity, resting on a placental and indirect infection or on a *direct* and *germinative infection of the egg.*"

Lately Friedmann has published experiments which seem to demonstrate effectively the germinative transmission. Kolle and Wassermann contested those experiments of Friedmann. And then come the experiments of Gaertner, which, after giving a testicular tuberculosis to male rabbits and guinea-pigs, and made them cover healthy females, arrive at the conclusion that out of 74 new borns, not one had tuberculosis. Hauser has obtained the same result.

Finally Kitt considers *germinative injection* so improbable that one must positively declare it *impossible.* To which Kolle and Wassermann add: *propagation of tuberculosis by germinative transmission of the tuberculous bacilli does not take place through the intermediate of the males.*

* * *

If the experiments of Gaertner have been negative in the sense that was reported above, they brought some light in another direction: as they demonstrated that males, by the ejaculation of a sperm containing tuberculous bacilli, might produce the infection of females. In many circumstances, tuberculous bacilli have been discovered in the sperm of males. They have been seen in that of man by Jani, Spano, Jaeckh, Nakarai, Dobrowski. Likewise in rabbits and guinea-pigs, made tuberculous by experiments by Gaertner, Maffucci and Cavagnis.

The tuberculous bacilli which appear in the sperm have various origins. They may come from any part of the genito-urinary apparatus, and for a special diagnosis it is necessary to take into consideration tuberculosis of the kidneys, of the renal

pelvis, of the ureters, of the bladder, of the urethra, or again of the testicles, the epididymis, of the prostates, of the vesiculæ seminalæ and of the efferent canals. In all cases, the form of tuberculosis, as well as that of the penis, implies the possible transmission of the bacilli by *coit*, or from the male to the female. This is admitted by Kitt, Siedamgrotsky, Friedberger and Fröhner. A bull that serves every year a great number of cows may, if he is suffering with tuberculosis of the genito-urinary apparatus, propagate the disease by infecting females.

* * *

The most difficult question to solve is the third. It relates to the aptitude that a stallion would have to transmit, to his product, the predisposition to the disease. Experiments cannot be instituted to solve the question, without being open to severe criticism. Favorable or contrary arguments on the question are only speculative. One may theoretically admit the existence of an individual hereditary predisposition as follows: Perhaps the abnormality of acquired constitution by heredity. Under this name might be understood a morbid weakness, a weakened faculty of resisting, or again an abnormal chemical composition in the organism, or in an organ or only part of an organ. Or it might also be that the hereditary congenital abnormality, by which the tuberculous bacilli would be allowed to enter the organism easier, would be eliminated with more difficulty, or would multiply much more readily and thus develop tuberculosis more certainly than in a subject healthy, and with robust constitution. The principal proof given in favor of the hereditary predisposition is the frequency of the disease in some families. The fact that children born of tuberculous parents take the disease readily is explained in general by heredity. Thus an *apparent* explanation is given: but it is not based on scientific controls. Cornet gives an important statistic on this point. Out of 809 cases of tuberculosis, he has found that those *who have lived in contact with their parents* contracted the disease, while those that were separated from their tuberculous parents escaped all trouble. Those facts have been confirmed

by several others. It is then well established that the principal condition of infection is in the presence of diseased individuals, which disseminate the bacilli, and that the essential factor in the propagation of tuberculosis is the consumption of food containing bacilli. "Still," adds Richter, "I believe that the influence of an hereditary predisposition cannot be entirely denied."

* * *

The article is completed with a few remarks on the tuberculous complexion and on the parts of less resistance (what is called the *habitus phtisicus* and the *locus minoris resistantiæ*).

Conclusions: From the present knowledge, the influence of a tuberculous male on his progeniture can be resumed as follows: A stallion affected with genito-urinary tuberculosis is unable to propagate his disease to a fœtus by germinative transmission; but he may infect the female and thus contribute directly to the extension of the disease.

Heredity or predisposition is, for many cases, an error which is explained by the direct infection in the family or the living in an infected centre; however, its influence cannot be denied entirely and must be considered at least as very probable. There are many cases of infection which are *family infection* or *infection from generation to generation.*

The best examples in favor of the great importance of direct contagion are given by the modes of extinguishing tuberculosis of Bang and Ostertag. And Behring goes further in attaching no practical value to conceptional heredity, nor to hereditary predisposition, but takes into consideration only *post-genital* infection, which in fact is correct, and when one, in general, speaks of transmission, *post-genital heredity* ought to be meant.

* * *

THE QUESTION OF THE DOCTORATE FOR VETERINARIANS is still in Europe occupying the attention of the profession, as well as the scientific papers. Of course, since the various motions that were made in the last two International Congresses,

it had to be expected that some steps would be taken so as to realize the wishes expressed at the Congresses. Indeed, by a royal decision, the Hungarian Veterinary School of Budapest has been authorized to deliver to graduated veterinarians the grade of *Doctor in Veterinary Medicine.* By this act, the institution of the doctorate, this school is in advance of all European institutions of the same kind. In Germany, however, it does not seem that the change will be so readily accomplished. The drawback is, that the delivery of such title belongs essentially to universities, and the various veterinary schools of Germany are not yet attached to universities. Some are or have the privilege of belonging to high schools, but with all that the *Doctorate* cannot be granted, for awhile, at least. In France, the question has received attention in some of the associations. At the Society Pratique much opposition was made some time ago, but of late it seems as if the subject was more favorably approached. This is no doubt due to the remarks that were made by Mr. Even, the able director of the *Semaine Vêtérinaire*, who showed that it was an error to believe that a special law was necessary to reach the result in view, as a simple decree would be necessary from the Minister of Agriculture, to which veterinary schools here are attached. The gentleman has been appointed a committee of one to get all necessary information and report. As Mr. Even is a very active man, I am sure that he will accomplish his task with success and that the necessary steps will soon be made to have the French diploma read as that of Budapest.

For me this course after a title is quite amusing! Indeed, what else can it be when I go back to 1876—namely, when the first diploma of the American Veterinary College was delivered (*a good genuine Doctorate*). And how many since. Again the United States were in advance.

There are two important records that the American veterinary profession holds: First, the establishment of the doctorate, and, second, the protective laws against quackery, the regulation of the practice of veterinary medicine! What a pity we are so

late, so slow, and in appearance so unwilling to *reform* our educational system.

* * *

IS EPIZOÖTIC ABORTION CONTAGIOUS TO HUMANS.—A very interesting question has just been raised by a veterinarian.

Epizoötic abortion of domestic animals is known as an infectious disease. It is the cause of great losses, and on that account has been the subject of much study. It is, therefore, comparatively well known as far as its nature goes and the proper means to struggle against it whenever it makes its appearance.

A farmer and his wife are both healthy and robust; they have a number of cows, among which one day the fatal disease appears. Their cows abort. A veterinarian is called, he recognizes the trouble and prescribes all the measures of sanitary cautions he knows of. Whether these were carried out to perfection or not is a question. Probably not, as the disease stopped for awhile, but soon returned.

In the meanwhile, the farmer's wife, who had become in an interesting condition, after a few months of pregnancy also aborted. After careful study of the case, of the condition under which the accident occurred, etc., no cause could be found to explain the mischief. And here the question presents itself: Was the woman infected as her cows had been? Is it possible that the microbes of the cows had found their way to the genitals of the woman by one way or another? Why not? Perhaps after milking the cows, has she had occasion to apply her soiled hands to her privates? Perhaps, as it is common in barns of cows for the woman to stoop down to micturate and infect herself with a piece of straw, etc.

All those are possible, and for Mr. Thierry, who told the story to the Academy de Medicine, it is deserving the attention of medical men, as well as of veterinarians, and on that account he asked that scientific inquiries be made and cases carefully recorded.

Professor Moussu, of Alfort, has already gathered several

cases, or rather facts which seem to corroborate the history of the one related above. It is certain that the question deserves attention, and the *Annals of Gynæcology and Obstetrics* here has already in a brilliant article urged all specialists to institute an extensive inquiry in that direction.

Known and frequent as epizoötic and infectious abortion is in the United States, no doubt our friends will have occasion to contribute to the researches that are going to be made all over the world.

* * *

INOCULATION AGAINST RABIES.—Among the many great medical discoveries of the last century, perhaps none has proved of such magnificent benefit to humanity as that of Pasteur, when he realized the antirabid treatment, which is to-day practiced all over the world. Many, however, are there who are not willing to recognize the value of the antirabid injections, and, even to-day, notwithstanding the wonderful results that are published, they are denying that Pasteur's treatment is of any benefit to one who has been exposed to the fearful infection of rabies and goes to submit himself to the subcutaneous injections that are practiced in all the institutes that bear the name of the French chemist.

Why remain blind to the results obtained, and which are the domain of the world's records?

In the *Annales de L'Institut de Paris* I find a statistic which speaks of the great good done by the antirabid treatment. Indeed, since its inauguration in 1886, there have been treated in the Institut de Paris, nearly 30,000 patients (in correct figures 29,261), and in these enormous figures there have been only 94 deaths, counting those that have died during the treatment and those that died afterwards at various times. The highest average of deaths has been of 94 per cent. at the beginning and the lowest of 18 per cent. in 1902.

* * *

The report for 1905 shows that 728 persons were treated in Paris, that 4 died with rabies, one death taking place before the treatment was finished.

Since the creation of the antirabic institutes in several other cities in France, the number of persons treated in Paris has considerably reduced: while 2,671 received attention in 1886, the number the last year has dropped to 728.

At St. Petersburg, I see in the annual report for 1903, that 1,442 persons applied for treatment at the Imperial Institut for Experimental Medecine. Of these, 230 were refused treatment, as it was considered not necessary. Of those that were treated, only 1,023 had been bitten by rabid animals, the balance, 419, could have been left without being treated for various causes, which excluded the danger of an inoculation.

The majority of the persons who received the injections came from rural districts. Adult men were in majority, then came children, and finally women. The bites were received from dogs, cats, wolves, horses, cows, pigs, sables, rabbits, and rats.

The number of deaths in that year were 12. The average is counted at 0.6 per cent.

* * *

BIBLIOGRAPHY.—My bibliographic receipts have been this month, what they generally are at this time of the year, namely, consisting principally of announcements of our veterinary schools. I regret very much that I have been considerably disappointed in glancing over them. Of course they are nicely gotten up, well printed, *generously* illustrated, but that is all. About reforms, not a word. In fact, the announcements of this year are just what they were last!! Among the principal ones that I have before me, are that of the Chicago College, which is accompanied with a rather good bulletin; that of the Kansas City Veterinary College, with pretty illustrations; that of the New York State Veterinary College, and, finally, the most modest of all, that of the New York-American Veterinary College.

In the exchanges that I received, one is quite interesting. Some twenty years ago the *Semaine Vétérinaire* issued its first number here. At the time of its majority, which has taken place, it was metamorphosed. Change of size, of form,

of staff, etc.—all because it had changed hands. Mr. Even, late of Buenos Ayres, is now the owner and director. He has, however, kept for principal editor one of the best supports of the former journal, and both will no doubt carry the *Semaine* to great success. We welcome it and wish it all that journalists could desire!!

Let me close now with a word or two on a book that our friends in America ought to know about—"*The Year-Book of the Department of Agriculture*, 1905." The annual report of the Secretary of Agriculture has lived, at least in the old shape that we have been used to see it. "The Year-Book" will somewhat takes its place—a change ordered by the Government. We hope that, however, we will not be deprived of the great publications that, as part of the Agricultural Report, we were accustomed to read coming from the Bureau of Animal Industry. The "Year-Book" is offered under a new aspect, a new colored binding. It is well printed, and, as usual, contains a number of handsome illustrations. Those are always exceptionally good. In over seven hundred pages of reading matter, a great many articles are published from many of the authorities on agricultural subjects in various parts of the country.

The report of Secretary Wilson occupies the first part of the book, of course. Of special interest, I find this passage among his remarks on domestic animals: "In the last annual estimation made by this department of the number and value of domestic animals on farms, nearly a year ago, it appears that the farmers' horses had never before been so numerous nor in the aggregate so valuable. First threatened by the bicycle and later by the electric trolley car and the automobile, *neither of these, nor all combined*, have scared the farmers' horses into diminished numbers or lower prices. On the contrary, horses on farms last winter were worth $1,200,000,000, or nearly as much as the corn crop of this year, and their number was over 17,000,000. Mules also are steadily increasing, and are worth $252,000,000."

After such a statement, coming from such well-informed authority, our friends of the profession will have no longer reason to fear that there will be no more call for veterinarians in a short time.

In the same report of the Secretary, there is a little part consecrated to the Bureau of Animal Industry and a few pages given to blackleg, swine diseases, Texas fever, sheepscab, maladie du coit, cattle mange, foot-and-mouth disease, tuberculosis, surra, trichinosis, etc.

"How Parasites Are Transmitted," by B. H. Ramson, is a very instructive article, which one can enjoy and learn by. It follows that of L. G. Howard on "The Gypsy and Brown-Tail Moth and European Parasites," which is itself very interesting. "Ostrich Farming in Arizona," by Watson Pickrell, is also very attractive, and I am sure will prove such to any one. The other parts of the work relate to agricultural subjects of less importance to veterinarians.

To briefly resume: I may say that, as advanced by the Editor: "The 'Year-Book' is an educator of farmers, and as such there is no doubt it will be very useful."

In a statistical table of the number of horses and mules, I find that for the year ending December, 1905, number of horses 18,718,578; number of mules 3,404,361 ! ! !

*Veterinarians, cheer up ! !* A. L.

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## KANSAS CITY WINS A.V. M. A. CONVENTION OF 1907.

Never has the Executive Committee of the American Veterinary Medical Association made a more wise decision than when it voted to accept the invitation of the veterinarians of Kansas City to hold the convention of 1907 in their midst. While there were more bids for this meeting than for any previous one within our memory, none were so deserving of recognition, for Kansas City not only has been putting forth a most hearty invitation for several years, but it came directly from the profession of the section: The Missouri State Association,

the Missouri Valley Association, the Iowa-Nebraska Association, and the individual members of the profession in and about Kansas City. Personal appeals reinforced the formal invitations, and there is no doubt but that the meeting there is earnestly desired and will be heartily welcomed.

Ex-President Stewart has been especially insistent and energetic in his advocacy of his home city, and set forth many good reasons why the International Association should go to Missouri. He said: "There are several hundred veterinarians in the territory tributary to Kansas City who have never attended a meeting of the A. V. M. A., but who will be attracted to it should it come here, and will make excellent material for increase of membership. Kansas City affords splendid facilities for a further study of federal meat inspection under the new regulations, and we can also prepare a most excellent exhibit of pathological tissues. It has been several years since such an exhibit has been given, and I believe it will prove attractive and instructive. Kansas City is only 40 hours' ride from New York, and Eastern members would not find it a serious hardship to come here. I can assure you that, while our facilities for entertainment are not equal perhaps to those of some other places, we will be delighted to make it pleasant for all who come."

While it is always desirable to hold the meetings amidst pleasant surroundings, and to accept with a relish the courtesies and entertainment generously and cheerfully provided by the local members, the great *desideratum* is the good we can do for our country, our profession, and ourselves; to go to that point where the greatest good can be done for the largest number of the membership, and to strengthen the Association by attracting to its roll the best material in the territory where the meeting is held, although there is but little reason why the moral and material support of every eligible veterinarian within its jurisdiction should be withheld. If the question be viewed by the narrow consideration of financial returns from the investment, every argument is silenced by the fact that the

printed "Proceedings," which every member receives, is worth many times the price of the yearly dues to any veterinarian who tries to march in the ranks of his fellows. But it has been proven that the greatest incentive to a desire to enroll in this great organization is personal attendance upon a meeting, for then it is forcibly demonstrated how great is the loss sustained through failure to participate in the work that is being done. If these are sound and logical grounds there is every reason why the Missouri Valley should have the convention of 1907, and we congratulate the veterinarians of that section upon their great opportunity, and the Association upon the wisdom of its Executive Committee.

## THE VETERINARIAN AND THE MEDICAL SOCIETY.

The REVIEW has persistently urged veterinarians to attend and take part in the programs of medical association meetings, for their own advantage and that of the profession which they represent. It gives us pleasure to record, quite frequently of late, such events, and to learn, from the medical side, that the impressions made upon the critical audiences are greatly to our benefit. Veterinary topics always bear a peculiar fascination to students of comparative medicine, and the tactful veterinarian can contribute a fund of information to the discussions upon many subjects that arise at such gatherings, if he is well posted upon the latest and most advanced thought in modern medicine. It is not sufficient that we know our worth: we must let the world know it; and there is no better medium to accomplish this than the society meetings of our sister profession, where our work will be appreciated and sympathized with. At the same time the veterinarian will have a splendid opportunity to better equip himself in medical knowledge through contact with men engaged in kindred work. The veterinarian can construct a paper of great interest to medical associations, and he will be readily accorded a place upon the program of the majority of such gatherings. A recent example of this nature

is that of Mark White, Jr., D. V. M., of Denver, Col., who read an excellent paper before the Medical Society of the City and County of Denver not long ago on "Subjects in Veterinary Medicine of Interest to the Physician." This was so well received that Dr. White was invited to contribute to the program of the Colorado State Medical Society at its meeting in Denver, Oct. 9–11, and he responded under the comprehensive title, "Tuberculosis of Cattle; How it May Be Repressed, and Its Relation to the Public Health." Every medical man in attendance went home with a higher appreciation of the veterinary profession. It all helps—only we need more helpers!

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DR. W. L. WILLIAMS, of Ithaca, N. Y., was in Connecticut and New York City Oct. 20th.

THE following veterinarians have finally been selected by the National Horse Show Association of America to act as veterinary inspectors at the approaching Madison Square Garden exhibition: Drs. H. D. Gill and Richard W. Kingston, of New York, and Leonard Pearson, of Philadelphia.

DR. THOMAS BLAND, of Waterbury, Conn., has been kept with his "nose to the grindstone" since the meeting at New Haven. His assistant has been in an hospital for ten or twelve weeks suffering from typhoid fever, and Dr. B. has been compelled to attend to all the details of a very large practice.

AS predicted in the October REVIEW, the Veterinary Department of the University of Pennsylvania has a considerable increase in attendance this year. In a private letter from the Dean, he says: "We have this year the largest and best class of freshmen that has ever entered the Veterinary Department of the University of Pennsylvania. There are fifty men in the class. The new building is well under way and fair progress upon it is being made."

DR. A. T. PETERS, University of Nebraska, is preparing for the December REVEIW an article of great interest to practitioners, entitled "Neurectomies of the Horse." It will give the results of 125 cases which have been watched for from one to five years. The article was written by Dr. Theodor Schmidt, first assistant to the surgical clinic of the Royal College at Vienna, and contains the most complete data on this important subject that are recorded in veterinary medicine.

# ORIGINAL ARTICLES.

## THE VETERINARY OPERATING TABLE.

By W. L. Williams, Professor of Surgery, New York State Veterinary College, Ithaca, N. Y.

The operating table for the horse has been enthusiastically championed and unsparingly condemned by veterinarians of high and low degree. The subject has received scant deliberate study and the discussion has been largely swayed by prejudice rather than reason and experience. Many veterinarians have condemned it without a trial or even any considerable observation, and upon various grounds. Some have condemned it because it is not portable and cannot be carried about with the practitioner in country or city; the same objection could be urged against an office, pharmacy or hospital. Others condemn it as an extravagant innovation which should not enter into veterinary practice because up to the present time we have virtually continued to do without it. Others have become enthusiastic for a brief space of time, installed a table, used it for a few times, then cast it aside and abandoned it forever. Not only have they condemned that *one* table, but, reasoning from their experience, have condemned *all* tables, past, present and future. In many cases the table itself was defective perhaps in some minor regard, which thoughtful changes would have remedied, but instead of thus improving the machine it was hastily cast aside. Others have attributed their want of success in surgery to the lack of an operating table, and when they have tried the machine only to find that it can neither perform operations nor heal wounds they are very naturally disappointed with it. Others cling to the operating table, as a magnificent advertisement and use each opportunity to display the machine even for cases which could be better handled without confinement at all or in the stocks. There are still others who believe in the possibility of devising a practicable operating table; that many cases requiring major restraint may be more advan-

tageously handled upon the table than by any other means, and that any case which can be operated upon under restraint by means of casting apparatus can also be confined upon a table.

We shall discuss operating tables from this last point of view, and in our consideration would have the reader make due allowances for our prejudices, admittedly in favor of the practicability of them, and the preference for the type used by us. We could not consistently continue the use of the table in daily work for a period of 9 years, side by side with various kinds of casting harness, following the exclusive use of the latter during 17 years' experience, except it had for us some points of superiority in cases of a sufficiently wide range of character to warrant its installation and retention. Having made this use of the table and after a long study of its practical working, with so many radical changes that we have virtually operated four or five different machines and studied them carefully, besides having temporarily operated upon or observed the actual working of an equal number of others and borrowed therefrom, and applied to our own each feature commending itself to us, it is inevitable that we should favor the one with which we are most familiar. Familiarity invariably begets a prejudice in favor of an instrument or machine and because the operator knows it in all its parts it becomes actually of greater value to him than another apparatus to which he is a stranger, even though intrinsically better.

Besides some rare forms of tables, which appear to attract little professional consideration, there are in this country three more or less prominent types.

I. The Vinsot apparatus or revolving stocks, modified, in England by Dollar and in America by Atwood (Humane Operating Table). Figs. 3, 4, 5.

II. The flat-topped table in which the top is so hinged or pivoted upon a fixed base that it may be moved from the perpendicular to the horizontal position, the animal, when the top is brought to the horizontal, lying flat upon a plane.

Some machines of this type, like the Conkey, have even a greater range of movement, so that the table may be almost reversed and the animal turned nearly in the dorsal position. There are numerous variations of this type, such as the Daviau, Mylne, Tiffany, Kyle Bros., Schmidt, Hodgson-Magee, New York State Veterinary College, Conkey, and others. Figs. 1, 6, 7, 8, 9, and 10.

III. The Kansas City or rocker type, in which the surface upon which the animal rests is essentially the same as in Class II., but is not hinged or pivoted to a fixed base, being wholly detached and resting upon the floor as upon rockers. Fig. 2.

In this article we wish first to make a comparative study between the table and casting apparatus as methods for securing horses or other large animals in recumbency for surgical operations, for which purpose we shall take the one used in our own clinic, since our familiarity with it renders it more easy to describe in all its workings; and, secondly, we shall endeavor to compare this with other tables, pointing out the essential differences as they may appeal to us.

In order to study this question rationally we must first arrive at some understanding as to what constitutes the chief aims of restraint in the recumbent position. Without attempting to enumerate all the objects or to assign each to its exact position of importance we would suggest the following as the chief ends to be attained:

1. The safety of the operator.
2. The safety of the patient against physical injury.
3. Placing the operative area accessible and convenient to the operator.
4. Convenience and safety of the patient for general or local anæsthesia.
5. The highest antiseptic or aseptic efficiency.
6. Comfort of the patient and the operator.
7. Celerity in handling.

1. *Danger to Operator.*—The operator is subjected to danger of physical injury in securing an animal by casting or in

placing upon the operating table; unbroken or restless animals may rear, strike or kick while the casting apparatus is being applied or during the preliminary securing of the patient upon the table. With the casting harness, the patient is usually held by the halter or bridle, sometimes supplemented by the twitch, while the apparatus is being applied about the neck, chest or feet according to the character of harness used. During this part of the operation the animal is quite free to rear, kick or strike and occasionally injures the operator more or less thereby.

With the operating table the operator and assistants are less liable to injuries during this preliminary stage. Secured by a strong halter with a stale 15 to 20 feet long in case of a wild animal, which is passed through the eye in the head piece of the table, as at F, in Fig. 6, the groom handling it can step entirely beyond its reach and yet hold the head firmly fixed against the table, and the fixation may be increased by carrying the halter rope back along the side of the patient and passing it through the table at E, in Fig. 6, instead of the side strap, for which the opening is made, and press the body of the horse firmly against the apparatus. The horse, if wild, is then in a position where the operator can affix a rope or hobble to the anterior pastern next to the table, and passing it through the opening for that purpose, an assistant can hold it and prevent the animal from rearing. The body, or suspending straps, D, Fig. 6, can now be applied without danger to the operator, and the table with the patient upon it can be promptly brought to the horizontal position with the operator and assistants entirely out of reach of the animal in its struggles, and once down the completion of the securing process can be carried out without coming in striking reach of the horse.

In casting animals the operator or assistants are at times endangered from the rearing, kicking, striking or falling of the patient. Once the patient is down and secured with casting apparatus, assuming that no breakages or displacements of the harness occurs, the operator is free from danger except in spe-

cial operations where a foot needs to be freed from the others, when it becomes somewhat difficult to secure the member which may have sufficient latitude and power of motion to cause more or less serious injuries.

With the table this danger is reduced to a minimum and renders the operator much safer than with the casting apparatus.

To be sure, accidents occur; a rope breaks, a fastening slips, etc., by either method, and the operator is exposed to physical injury.

2. *Safety of the Patient.*—In securing the animal for operation, danger may arise either during the application of the apparatus of restraint, while secured, or during the act of release. The chief injuries to the patient which we have to fear in securing are fractures, strains, contusions and excoriations. During the process of casting there is some danger to the patient while the harness is being applied. An unbroken colt may rear or fall backward in such a way as to seriously injure itself, or when the casting apparatus is only partly applied it may break away from the assistant who is holding it, become entangled or otherwise endangered. The same may be true of the table and can only be avoided in each case by the judgment, agility and strength of the groom or the person in charge of the head. In confining animals in the Vinsot machine there is apparent danger that wild or nervous ones may become entangled in the machine itself, causing serious damage by rearing, striking or kicking against the hard metallic apparatus. In the case of the other types of operating table described, the animal cannot readily injure itself against the apparatus because it has a smooth wall, parallel to its own body, against which to kick and strike, but it may lunge and fall heavily forward over the side strap or possibly break its neck in its struggles, but this can not well occur if the proximal fore foot is firmly held to prevent rearing and the head is properly secured.

Taken all in all, it seems to us from our study and experience that the table is quite as safe in this respect as a casting harness.

After the animal has been attached to the operating table and we come to place it in a recumbent position the process seems quite free from danger and we have yet to learn of an injury to the animal during this stage of restraint, while in casting the animal is liable to fall very heavily, causing severe bruises or even fractures.

When the animal is once confined in a recumbent position by casting and effectively secured, the limbs are displaced from the natural pose and afford opportunity for injuries of a serious character as a result of muscular effort in resisting the confinement. It depends very much upon the position in which the legs are fixed whether the animal can seriously injure itself or not. With the horse in lateral recumbency upon the operating table with each foot stretched out at right angles to the long axis of the body, firmly secured and fully extended, the body rigidly fixed by means of straps, the head held in position by the operating halter, which is securely fastened to a line cleat upon the table, and the restraint has been rendered more complete by attaching the tail firmly to a fixed point upon the machine, we have the animal in a position in which neither spinal column nor extremities can be forcibly bent or in any way injuriously acted upon by the muscles owing to the resistance of the animal. In this, the operating table differs widely from any method of casting which has been devised, since by the latter there is constant opportunity for applying to the spinal column or limbs very dangerous strain, resulting, not infrequently, in serious and fatal injuries to the animal.

Upon the operating table the animal may struggle very violently and use all the muscular effort at its command without serious danger of immediate injury in the way of strains or fractures, but while not subjected to material pain, may strain so violently as to thoroughly exhaust itself and in some cases cause prolapse of the anus or possibly ruptures; but we have been unable to observe any marked difference in the two modes of confinement in this respect. In some cases upon the operating table we have been obliged to resort to chloroform in order

to control these violent struggles when the operation itself really did not call for anæsthesia; but the same observation applies as frequently to securing by casting.

Contusions are not liable to occur either from casting or from securing upon the operating table when the process has been completed. The usual way in which these occur is by the confinement being incomplete, so that the animal can elevate the head or some other part of the body and strike it forcibly against the table or floor, and in this respect the former is superior to the casting apparatus as the head can be almost immovably fixed to the table and is not dependent for efficiency upon the watchfulness of an assistant.

Excoriations are probably more frequent upon the operating table and occur most commonly on the supra-orbital arch or along the side of the face, at the angle of the hips, and about the pasterns. The excoriations in the region of the eye and side of the head are due to the to and fro movements of the head gliding along the floor or table, and since the horse cannot directly elevate the head when confined upon the latter, there is probably more of this horizontal movement than is seen with a casting harness. We need be very careful to apply a good operating hood or other protecting apparatus for the head with an operating table, or we are liable to produce very annoying excoriations at this point. The makers of operating tables erroneously conclude that padding the table top prevents these excoriations; but it is found in practice that there is no material available upon which we can place the head of a horse and have him move it violently to and fro, but abrasions will result; and especially is this true if the surface upon which the head is moved is wet or moist as with wound discharge, blood or antiseptic solutions. We must therefore depend for protection upon a covering which will move with the head if we would avoid these injuries.

The excoriations upon the angle of the hip are far more common with the table than with the casting apparatus, and can be avoided, like the galling of the head, most effectively,

by free pads or cushions, which can move more or less with the body of the horse.

The excoriations or galls of the pastern are common alike in casting and confining upon the operating table, and are due ordinarily to the drawing of a rope under great pressure across the skin. The injury is probably far more common with the operating table than with casting; but it may be prevented in either by the use of well-made, broad, smooth hobbles, and the exclusion of ropes and cords from bearing upon these parts.

In releasing an animal there is greater danger with the operating table than with casting apparatus, since we attempt to place the patient in a standing position instead of unfastening him in recumbency and leaving him to rise at will. Yet the danger in this respect with the table is not great and may be almost wholly obviated if trained assistants are available.

In releasing the horse, he may hang stubbornly in the retention apparatus, and if freed may fall upon the floor; but if when the table is turned to the perpendicular, all feet having been previously released except one fore foot to prevent rearing, and on this one the foot rope is loosened from the line cleat and held by an assistant, the operator is in a position of mastery and can keep him secured and his body well elevated until he consents to stand. Once the patient gets upon his feet, the supporting girths, the halter rope and the one foot rope can be simultaneously and instantly released; and any cause for falling or being otherwise injured is virtually excluded. An obstinate animal can give much trouble in this way and waste the time of the operator, but patience and a knowledge of the proper working of the table will eventually triumph.

*3. Accessibility of the Operative Area.*—It has been said that certain operations could be well performed upon the table which could not be done by casting and that others are practicable by casting which could not be done on the table. Neither form of securing can claim exclusive application in any operation. Any animal may be secured where the recumbent position is desirable by either casting or the operating

table, in a reasonably good manner for any operation upon any part of the body. It becomes therefore a question of convenience and superiority of the one method over the other rather than the selection of the one to the exclusion of the other. With the table the animal may be confined upon its side or upon its back or any desired inclination between these two, the feet and legs may be moved to any desired position, extended or flexed, abducted or adducted, or placed in almost any conceivable attitude which may be desired. The principal questions arising are: the security of the fixation of the part, its natural pose by which the anatomical relations of the parts to each other undergo a minimum distortion, and the relation of the area of operation to the operator. By means of a proper system of pulleys or other apparatus the extremities may be secured in any desired position upon the operating table, as is suggested, for example, in Fig. 9, where the uppermost hind leg is sharply abducted so as to expose the inguinal region for the operation of cryptorchid castration, in which it may be clearly seen its position may be varied within any limits compatible with safety, the latitude of which does not differ in the two methods. Changing the animal from lateral to dorsal recumbency, as shown in Fig. 11, we have exposed the ventral surface of the body, placing in a convenient position the areas involved in operations for roaring, hernia, or other procedures upon these parts.

If we study these same two figures we will see that a great difference exists between the relation of the operative area in confining upon the table and by casting; in the former, the operator works in the standing position with his operative area at a convenient height, offering the greatest freedom for exertion and movement on his part with the least possible strain and fatigue. He is not cramped and the movements of his body are perfectly free and normal. With the horse cast, the operator must kneel beside the animal and bend over the operative area in a more or less uncomfortable, not to say unstable, position, which to some extent diminishes his power of move-

ment and interferes with the quality of the operation. The question of the relation of the operative area to the operator is emphasized in many major procedures, such as resection of the flexor pedis tendon, quittor operation, the quarter-crack operation and others of a similar character.

To the uninitiated it is true that an animal confined upon the table may at times seem to be in an awkward position, but the reverse would be equally apparent to a man accustomed only to the operating table with a given operation, were his patient confined by casting. It is wrong for one to judge this question without having had reasonable parallel experience with the two methods of confinement in the same operation since, generally speaking, that method of confining animals to be operated upon to which he is accustomed is the best for him, better than some other way which is possibly far superior intrinsically than that which has been experimentally learned by him.

*4. Convenience and Safety of the Patient for Anæsthesia.*—With our rapid advancement in surgical procedure, and the increasing desirability for asepsis and avoidance of pain, anæsthesia becomes more and more important. We therefore strive constantly to render it safer and more available in our work. In the cast animal the head cannot be fixed or held readily in any definite position, which considerably complicates the administration of anæsthetics. It has been recently shown by investigations under our direction that one of the most serious consequences of chloroform anæsthesia, inhalation pneumonia, is due to the inhalation of mucus laden with bacteria from the nose or mouth into the lungs during the process of anæsthesia, while the cilia of the respiratory tract are paralyzed by the chloroform vapor. In order to prevent the inhalation of this mucus it is essential to the highest degree of safety that the poll be kept elevated and the nose depressed so that any liquid shall flow out through the nostrils instead of passing back into the lungs. In this respect the operating table, when equipped with a depressed head-piece, as shown in Figs. 2, 8, 9 and 10, offers the best possible protection. We may, of course, imitate this

in the cast animal, but cannot reach the same degree of efficiency. In respect to the danger of chloroform from respiratory or cardiac syncope, it is less theoretically upon the operating table than in the cast animal, because the position is normal, with less interference in respiratory movements. When danger of collapse from chloroform appears, the animal upon the operating table is in a better position for attempting resuscitation than though confined with casting harness.

5. *Antiseptic or Aseptic Efficiency.*—In modern surgery we constantly aim to attain the highest possible efficiency in antisepsis or asepsis, and our success depends largely upon the degree in which we apply these principles; and aside from the precautions being taken with the operating field, the surgeon's hands, the instruments and dressing, the chief consideration which the surgeon has in view are the immobility of the part to be operated upon, the freedom of the room from dust particles, the control of the surgeon over hæmorrhage, and of the entrance into the wound of septic substances as a result of the contact with the wound of contaminated apparatus or bedding. The immobility of the part to be operated upon can be attained in two ways: (a) by fixation, (b) by anæsthesia. The latter has been considered in the preceding paragraph, and the immobilization of the part is undeniably more effective with the operating table than by any other means of fixation, because in almost all operations the part of the animal to be manipulated is bound down firmly against a rigid surface, the table top, and the possible motion of the part is reduced to the minimum, while, in casting, the part to be operated upon is usually fixed to some other portion of the animal, which in itself is capable of more or less extensive movement.

In reference to the question of injurious particles floating in the air in the form of dust, both the operating table and casting harness present advantages and disadvantages. If the casting is done upon a lawn well removed from public highways or stables the surroundings are highly favorable for asepsis in so far as floating particles are concerned.

If the animal be cast in the stable or in the operating room the conditions are not so good and we are constantly in danger from septic infection which may gain entrance into the wound in a variety of ways. If cast upon straw or other bedding, unless it has been moistened, any organisms present may be freed from it and, floating in the air, fall into the wound. In the operating room where operations upon septic wounds frequently occur, the room and all objects therein become excessively foul unless ample precautions are observed and may render such a place highly dangerous for surgical procedure. Under these conditions it seems to us that when we have placed the animal upon a table which is clean, we have done the utmost in our power in this one detail of confinement to avoid the dreaded contamination. In any case, whether upon the table or by casting, we cannot wholly avoid the presence of floating dust arising from the body of the animal itself during its struggles, but with the casting harness the resistance of the animal may at any time necessitate such displacement of the harness as to increase the danger of the infection of the wound from this source. The control of the hæmorrhage is easiest in that form of confinement which is most fixed because it permits the operator to work with the greatest deliberation, in which respect we count the table superior.

*6. The Comfort of the Patient and Operator.*—The comfort of both patient and operator is fundamentally dependent upon the normality of the position during the period of operation.

In casting, we have no method of securing an animal in a pose which it would normally assume when recumbent, the very conditions of restraint defeating such an object.

Placed upon an operating table as shown in Fig. 9 and with the right hind foot lowered, the position is virtually identical with the normal lateral recumbency of the animal and he can remain in this position for some hours without material discomfort or fatigue.

In Figs. 5, 9 and 10, it is also shown that the operator is standing, without necessity for any bending or twisting of the

body and in every way in the most stable and comfortable position.

In the cast animal this position of repose and comfort are unavailable to either patient or operator.

The inconvenience of operating upon the cast animal will vary greatly with the operation and operator, and in a simple procedure like ordinary castration, where only a few moments are required for its completion, the position of the animal matters but little to the patient or to the operator. If we take such an operation as resection of the flexor pedis tendon, where our field of operation is the plantar surface of the hoof, which stands perpendicular, the operator must kneel down or must lie upon his face to reach the parts and see clearly what he is doing; and if the case should prove very tedious, he emerges from the ordeal very much exhausted and cramped from his uncomfortable position. In a less degree the same effects obtain in the operation for quittor and in many other procedures. There are great differences in this regard with different operators. Small men, lithe in form, and young, can withstand such unfavorable positions for a comparatively long period of time; but after an operator has reached middle age, or has become more or less corpulent, or is in any way stiffened or suffers from any physical defects which interfere with his agility, the uncomfortable poise during a protracted surgical operation becomes a very serious matter and to him the operating table, which permits him to perform virtually any operation known, either in a comfortable standing position or sitting erect upon a stool, appeals with an overwhelming force; so that once he has had experience by the two methods of confining, it can scarcely be conceived how he could do otherwise than unhesitatingly choose the table, a result which has been uniform so far as our observation goes.

7. *Celerity in Handling.*—It requires somewhat more time to secure the animal upon the operating table than by the casting method. More help is also required for placing an animal upon the operating table and this has been put forward as an

objection to its use, but so far as we have been able to observe it is not well founded. With a quiet horse the operating table can be successfully worked as a rule by two men, but admittedly there is a possibility that the patient may give considerable trouble by becoming frightened and struggling more or less violently before he is secured upon it, and that it is better to have three or four persons. The same is very largely true also of the casting harness and it not infrequently requires all the resources of three or four men to cast unbroken or restless horses with any degree of safety or security to the patient and operator. And after the animal has been cast for an operation of much moment it is usually desirable to have three or four men present to maintain the patient in a given position or aid the operator in a variety of ways. Neither have we found difficulty in practice in securing abundant help of a quite competent kind, close at hand. We have found plenty of persons who were anxious to aid in order to observe the operations, and have experienced more difficulty in having too many about. Once the animal is secured by either method, the number of persons required to keep the animal in position will vary according to the particular attitude in which we wish to fix it. If we wish to place a horse upon his back and maintain him there conveniently, it requires three or four men by whatever method chosen. While according to our observation it requires more time to secure a horse upon the operating table than it does in casting, we have not found that it demands so much more help as to be a serious objection.

IN COMPARING VARIOUS OPERATING TABLES WITH EACH OTHER we would view them from the same standpoint as we have already done in comparing the table with casting apparatus and keep in mind the same points of excellence. We have already suggested that in confining an animal for operation one of our chief objects is the maintenance of asepsis or antisepsis. To this end the table should be so constructed as to render it easily cleansed and thoroughly disinfected. In order to maintain these conditions we believe it is best to omit any fixed

padding, but rely entirely upon detachable cushions, which can be readily immersed in a disinfecting fluid or boiled, as may be preferred. This applies in common to all tables, and while many have fixed padding, this can be readily omitted in any one of them.

In considering the safety of the operator it seems to us from observations made that the Vinsot apparatus possesses this quality in the least degree of any of the three types mentioned. In securing the horse in the apparatus the operator seems to us more exposed with this table to kicks, strikes or treads than applies in either of the other types. Once the animal is secured the operator is safe with any type of table, although with the Vinsot apparatus, as shown in Fig. 5, when it is desired to operate on the legs or abdomen he must be completely surrounded by the horse and apparatus combined, so that should a foot become accidentally loosened the operator is hemmed in in a manner which invites serious injury. He must also stoop to pass under the chain and bar in passing to or from the operative position. It is assumed that the feet will not become loosened, but any surgeon of experience knows only too well that any mechanical appliance may break in an unexpected manner or at an inopportune time. A strap is old, a rope is weak, a link in a chain has a flaw or imperfect weld. The protection of the patient against injuries varies but little in the different types of table except that in our view he is more exposed to such while being confined in the Vinsot apparatus.

Any advantages in any of the various styles of the ordinary flat topped, or the rocker table are due rather to the difference in the details of the straps, etc., by which the animal is secured to the top, than to any essential difference in the solid portions of the apparatus. The principal element, as we have already suggested, in reference to protecting the animal consists of adjustable pads to protect those parts of the body that come in acute contact with the table surface. The ropes and straps by which the animal is to be attached to the apparatus should

be so arranged that they bring the part of the animal to which they are destined closely and firmly to the table and admit of secure fastening upon the posterior or inferior surface. With such tables as the Kansas City and New York State Veterinary College, the patient is readily turned end for end or from one side to the other upon the table while under anæsthesia. Some tables, such as that made by Kyle Bros., of Colfax, Ill., have large cams upon the upper surface in such a position that the animal is liable to be injured thereon while being secured or released and do not permit the patient to be turned about upon the surface while anæsthetized. These projections upon the surface of the table are always highly objectionable and dangerous and are entirely unnecessary, as we have no form of fastening, either for ropes or straps than can not be as well or even better managed upon the posterior or inferior surface of the table as upon its face. The further protection of the patient from injury while upon the table will depend upon the method used for fastening, upon its security and the ease with which it may be adjusted. Buckles and billets are objectionable, since they are uncertain in their working, are not nicely adjustable, since no tightening or loosening of straps can occur except the variation be equal to the distance between two tongue holes in the billet. The buckle frequently refuses to work, especially from rust, which antiseptics greatly favor, and unless specially made is insecure in strength.

The cam is somewhat objectionable because in making fast a strap or band there is inevitably some slack whenever the mechanism is closed; and there is the further danger that unless it is perfectly adjusted to the strap, it will after a time wear so that the latter will slip if too thin, or the cam cannot be securely locked if the strap be too thick; so in case of either extreme it is annoying and insecure. The greatest security and fixity, as well as facility in changing the tension, is obtained by means of line cleats or by the ratchet cylinder. With either of these the tension upon a strap or rope may be increased or decreased very quickly without the danger of completely releas-

ing the part. These different means for securing straps, ropes, or other apparatus, are equally applicable to all tables. In our judgment each foot should be secured independently. Different surgeons will probably favor the one or the other method according to their personal experience, and we only wish to emphasize the point that whichever method is chosen, the point of fixation should be upon the posterior or inferior side of the table, should be secure, and should admit of easy and safe adjustment.

The different styles of tables present varying facilities for making the operative area accessible to the surgeon. In our table, Figs. 6–10, it will be seen that any part of the animal can be readily approached, which is not true of the Vinsot apparatus, Figs. 3–5, the Daviau table, Fig. 1, or the Kansas City table, Fig. 2. The head of the animal is greatly obscured in the Vinsot apparatus by the frame-work of the machine, so that it is difficult for the operator to approach it closely; while in ours it can be approached freely from the upper or dorsal side of the face, from the nasal side or end, and from the ventral surface, thus enabling the operator and two or several assistants to readily come in contact with the part without being in the way of each other in the least. The Kansas City table is the same in this respect, and any one of this type, like the Daviau, Kyle Bros., or others, can be readily changed so as to possess the same advantages, by simply cutting off the ends and affixing the proper sized headpiece to the main body.

The Daviau apparatus, which has been constructed with a view to turning the animal from side to side on the table, results in the projection of the surface far beyond the dorsal line of the animal, to such degree that the operator needs to mount it in order to approach this region of the horse, and consequently places himself in the same relation to the animal as if the latter were cast on the ground. This great extension of the table beyond the body of the animal is always a serious disadvantage, and so far as we can see has no compensation in any case.

In our table the feet and legs of the horse are freely approachable in every direction, as shown in Figs. 8 and 9,

whereas in the Vinsot apparatus the operator can only approach the plantar surface of the feet without first stooping and passing beneath the chain and iron bar. In most of the flat-top tables the length of the top is so much in excess of the distance from the fore to the hind legs of the horse that it projects considerably beyond these, so that when the operator approaches the horse he must reach some distance over the table in order to manipulate the anterior limbs from in front, or the posterior from behind. These defects are easily remedied by reducing the length of table at this point to correspond with the distance between the hind and fore legs, so that any of these machines can be readily made to conform to these rules. In the Kansas City table, that of Daviau, Kyle Bros., and the others, the posterior surface of the anterior limbs, the anterior face of the posterior limbs, and the ventral surface of the abdomen, can only be reached by climbing upon the table and again meeting with all the disadvantages as to position which prevails in the cast animal. This condition is easily remedied in most forms of table, the chief exceptions being in those like the Kyle Bros., in which the mechanism does not allow us to make any great change because it is located too near the bottom of the apparatus, and would require a wholly different mechanical arrangement in order to get room to make a detachable centre piece which will permit the operator to step in between the anterior and posterior legs directly up to the floor of the abdomen without any obstruction.

The mechanical power for operating the table may be of the most diverse character, and may be varied according to surroundings. The cheapest method for operating a table, and one which is universally applicable, is ropes and pulleys. They are cheap, easily affixed to any table, easily worked and have high efficiency. They have the objection of being somewhat dirty, their working tends to stir up some dust, and they are difficult to cleanse.

The hydraulic jack, such as we use, Fig. 7, I, is neat, convenient and powerful, the table can be stopped and held at

any point, and apparently is simple and enduring. It works somewhat slowly, but very evenly and virtually without noise. It is somewhat expensive.

Water or electric motors could be used without difficulty and would be effective, but the original cost would be somewhat heavy.

The system of cog-wheels, endless chains and other devices, work effectively, but tend somewhat to get out of order and have a formidable objection in that they generally prevent the arrangement of the detachable centre piece as suggested in the preceding paragraph. It seems to us that any of what we have termed the flat-topped or the Kansas City table can be readily modified to conform to the conditions which we have stated.

In reference to convenience and safety for general anæsthesia we regard the Vinsot apparatus as the most objectionable of the entire group, as we have seen it operated. It may be that there is a way with this apparatus by which the head can be placed and secured in what we consider the right position for anæsthesia, but we have not seen this accomplished by those whom we have watched in operating it. As we have seen it, the cephalic region is constantly obscured by the frame-work of the apparatus, so that the anæsthetist cannot freely reach it, while the body of the patient rests upon a lower level than the head, which causes the nose to be directed obliquely upward, higher than the poll and consequently invites the flow of bacteria-laden mucus from the nose and pharynx into the larynx and trachea. In the table made by Kyle Bros., the Daviau apparatus and similar machines, there is some inconvenience about reaching the head and it is difficult to keep the nose depressed while administering chloroform, and we very much prefer the depressed head piece as shown at the right in Figs. 8, 9 and 10, which has rendered us an excellent service. A similar result can be obtained upon the other tables with some annoyance by means of placing a thick pad under the poll of the animal, which by elevating it causes the depression of the nose.

In regard to the aseptic efficiency, no one table possesses

any material and incontestable advantage, because they can all be readily placed in the same condition. We prefer and use for our table surface very largely iron, and the other parts are of highly polished hard wood. We use hard maple, which is exceedingly hard and does not splinter and is also cheap. We have already spoken against fixed pads upon the surface of the table and need not discuss them again.

The character of the straps by which an animal is secured upon the operating table varies greatly in different cases and each has its special advantages and disadvantages. In the Kansas City table and in ours it will be noted that the confining apparatus beneath the belly of the animal consists of two or three straps of varying width, while in the Daviau table, Fig. 1, and in the Vinsot apparatus, Fig. 4, we have a broad sling similar to that used in slinging a horse for the treatment of fractures or other purposes. This sling has the evident advantage of an extensive distribution of the pressure over a wide area, but it has the evident disadvantage of covering a large part of the body, which may interfere with operating upon a given area. A comparison of Figs. 1, 4 and 10, will make this quite apparent and in our table we can release either of these straps, as shown in Fig. 9, and thus increase the availability of the surface of the animal for operation. The separate straps are probably more convenient of application and are certainly more subject to adjustment than in the case of the broad sling. These straps or slings should be composed of a material which can be readily disinfected or sterilized by boiling without injury. Leather should consequently be avoided and in its stead cotton bands or similar material should be used. The advantages in cleanliness and convenience for disinfection is quite apparent upon comparing the two single straps, D, in Fig. 6, which can be readily boiled, with the complex apparatus shown in Fig. 1, which inevitably becomes filthy and offers no available means for cleansing.

In conclusion, our study and experience leads us to assert that the operating table has a highly important place in the

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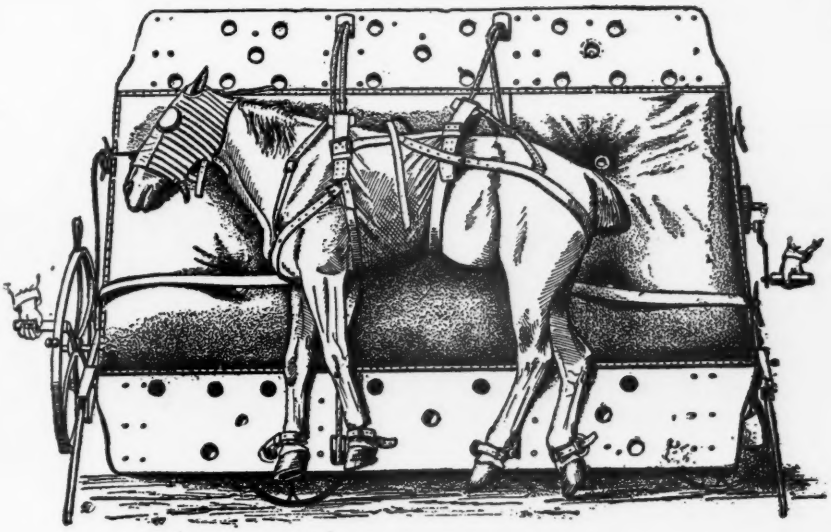

FIG I. DAVIAU'S TABLE.

The animal is shown confined and the table being turned down and standing in an oblique position, the feet of the patient being off the floor.

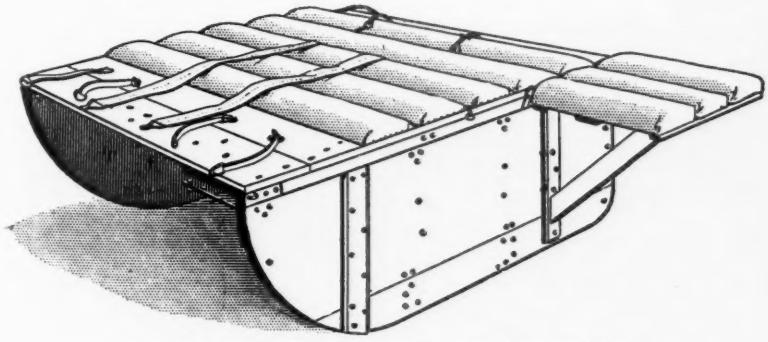

FIG. II. THE KANSAS CITY OR ROCKER TYPE OF TABLE.

Turned down and showing at the right hand the adjustable head piece.

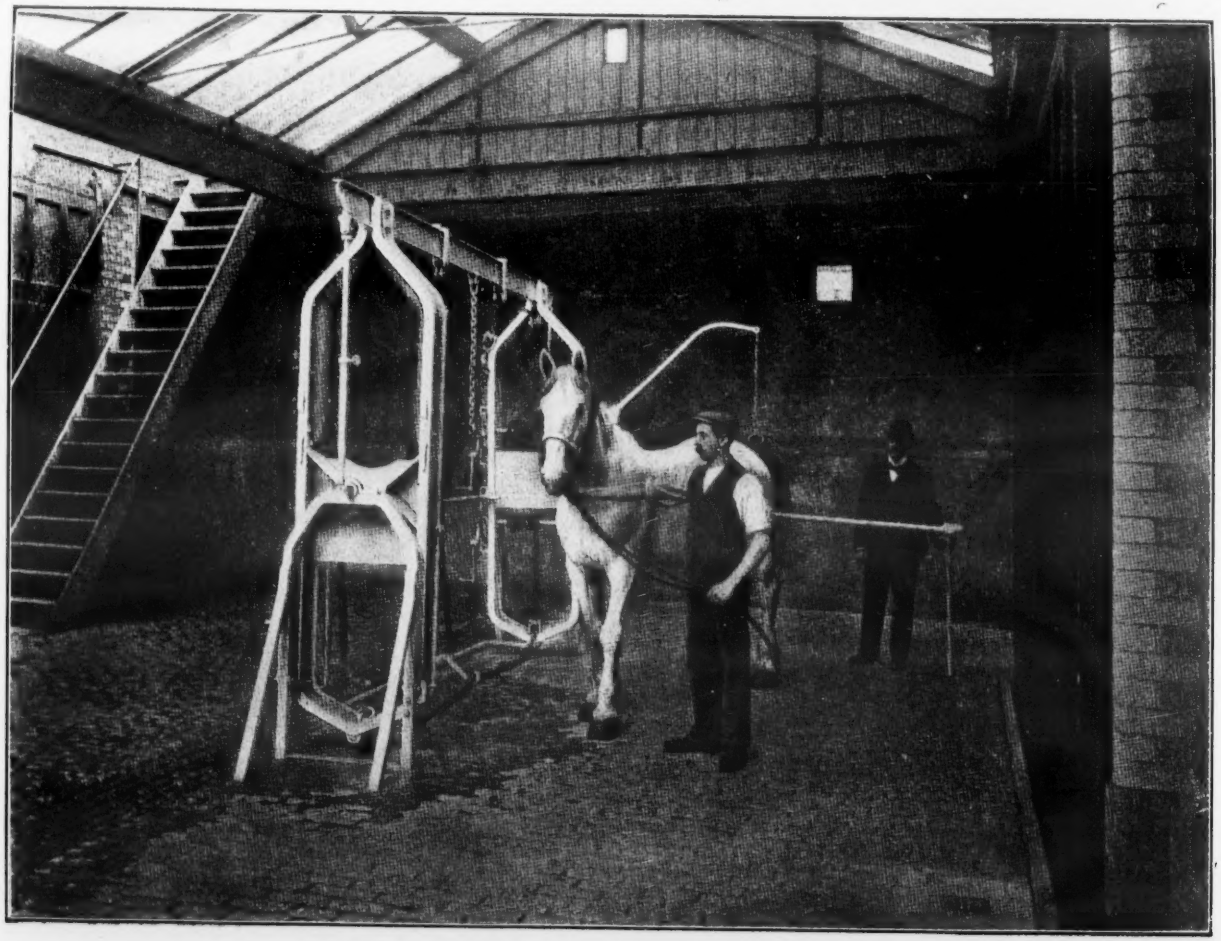

FIG. III. THE VINSOT APPARATUS MODIFIED BY DOLLAR.
Machine opened preparatory to securing the animal.

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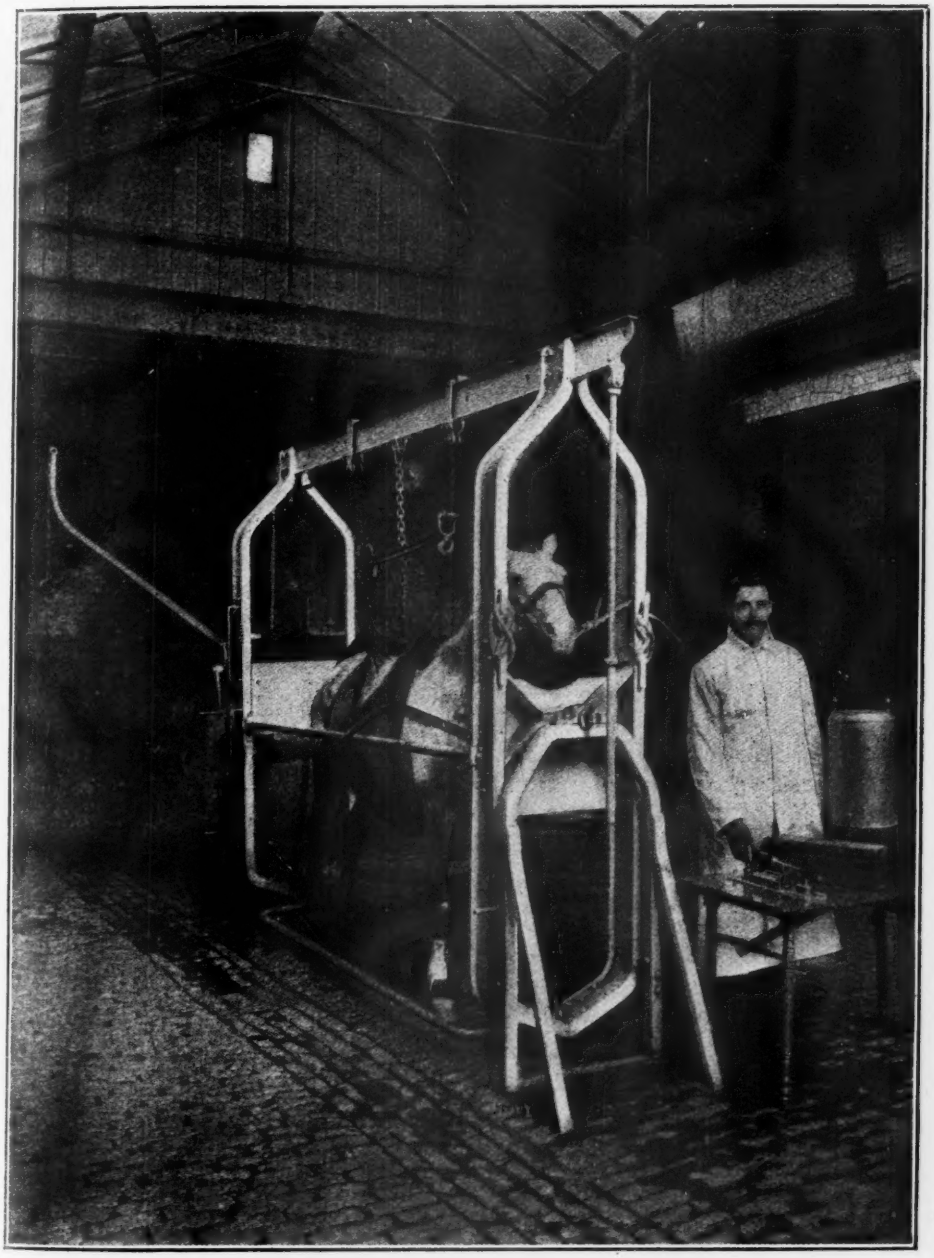

FIG. IV. VINSOT'S APPARATUS AS MODIFIED BY DOLLAR.
Patient secured in the apparatus as in stocks for standing operation.

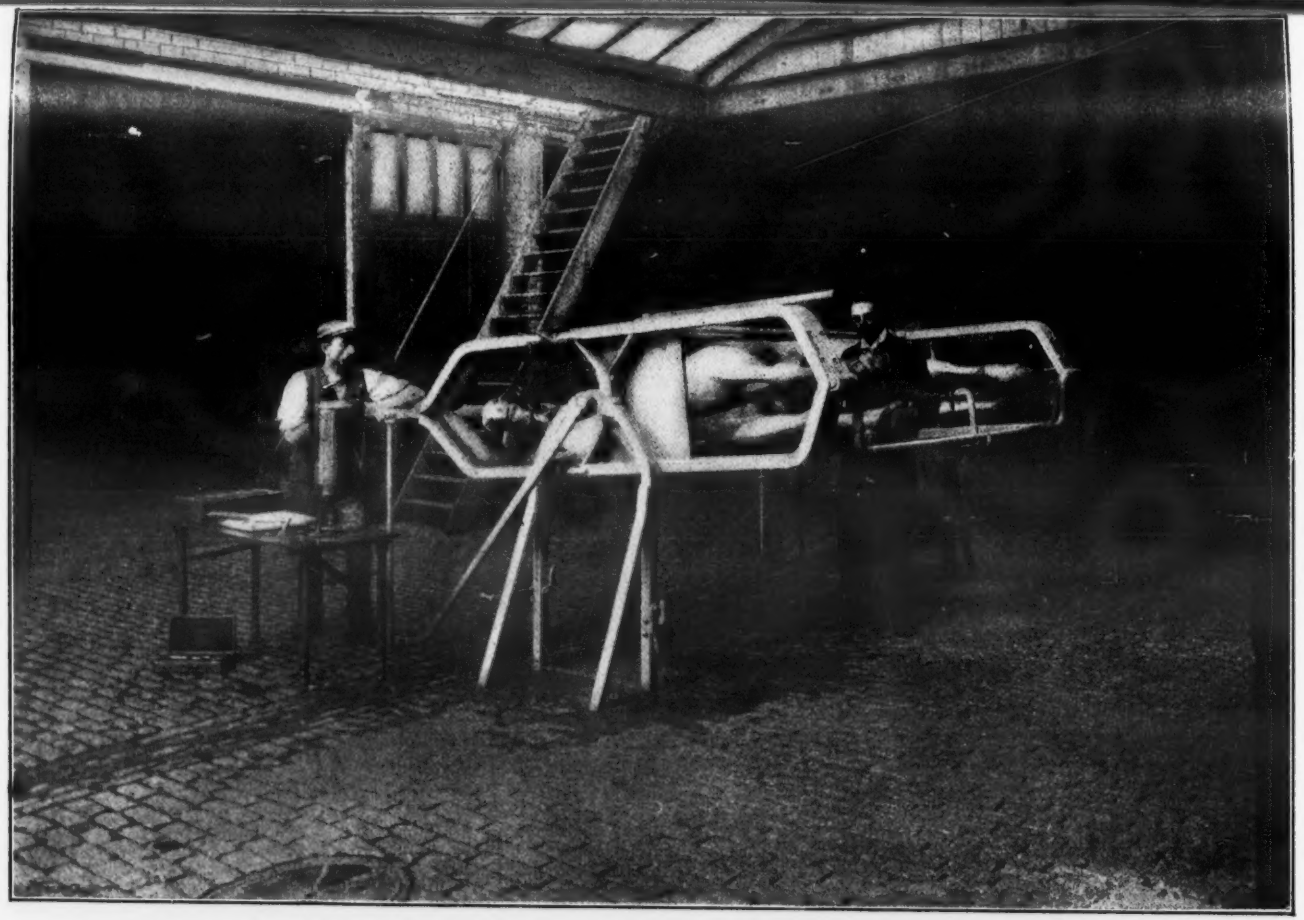

FIG. V. VINSOT'S APPARATUS MODIFIED BY DOLLAR.

Patient secured and placed in the horizontal position. The operator is shown standing between the hind and fore legs of the horse and confined in his position by the foot chain and bar.

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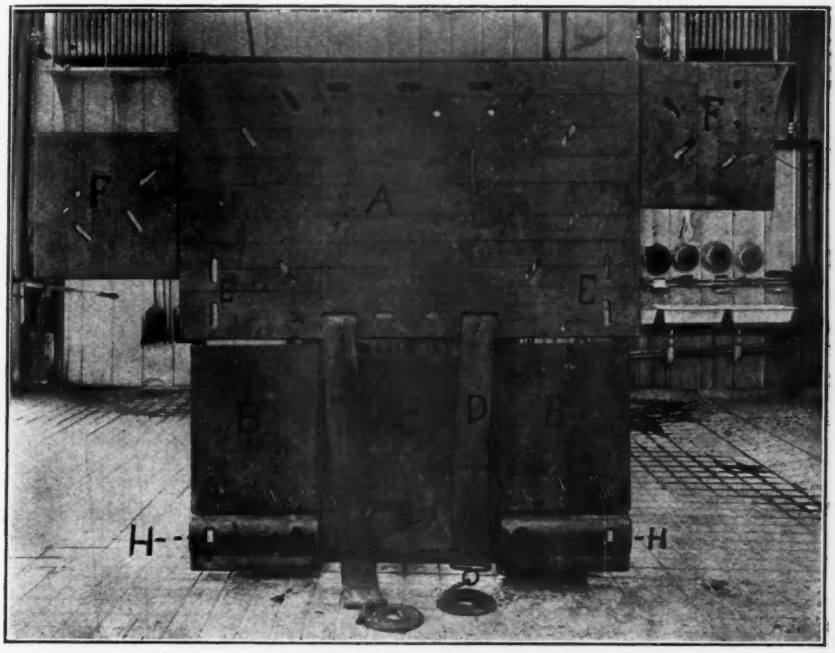


FIG. VI. THE NEW YORK STATE VETERINARY COLLEGE TABLE.

Front view with table in perpendicular position.

(A.) Table surface of polished hard wood.

(BB.) Lower section of the table of heavy boiler plate iron.

(C.) Detachable central section composed of heavy boiler plate iron.

(D.) Securing straps or bands which act as a sling beneath the horse.

(EE.) Openings in the table through which the side line or longitudinal strap passes in confining the animal.

(FF.) Adjustable head pieces. The one on the right is placed at the highest point while that on the left is attached lower to accommodate smaller sized animals. One of these is depressed as is shown in Figs. VIII, IX, and X, while the other is direct.

(HH.) The foot pieces of heavy cast iron in each segment of which are two holes for the passage of the foot ropes as shown in Fig. VIII. These foot pieces are rounded and project above the general surface of the table sufficiently to have a space between the lower part of the limb and the table surface.

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FIG. VII. NEW YORK STATE VETERINARY COLLEGE TABLE.

Rear view.

(I.) The hydraulic jack by which the table is operated. The pump from which the jack is worked is located along the wall of the room and connected by concealed pipes.

(J) One of the pedestals upon which the table pivots.

(L.) One of two supports upon which the upper portion of the table rests when horizontal. The second support is not shown in the photograph.

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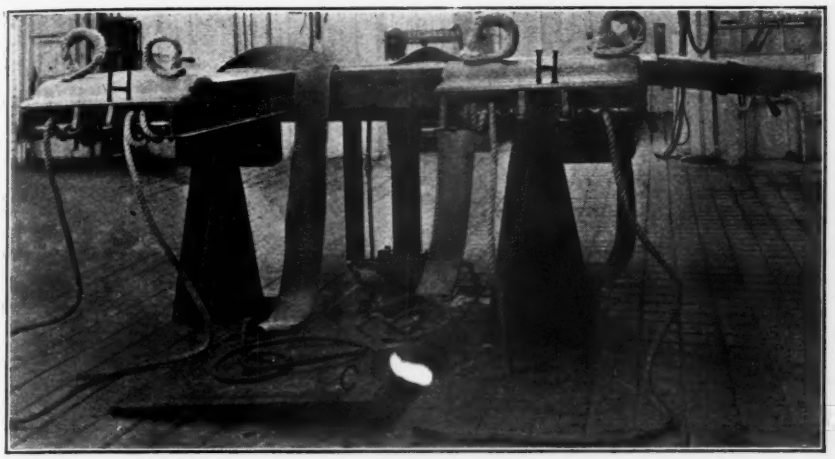

FIG. VIII. NEW YORK STATE VETERINARY COLLEGE TABLE.

Turned down to a horizontal position with the centre piece removed and dropped upon the floor, and the four looped foot ropes in position in the foot pieces, HH. The lettering is identical with Fig. VI. Each foot rope is shown passing through a ratchet cylinder beneath the table. This cylinder is operated by means of a ratchet lever.

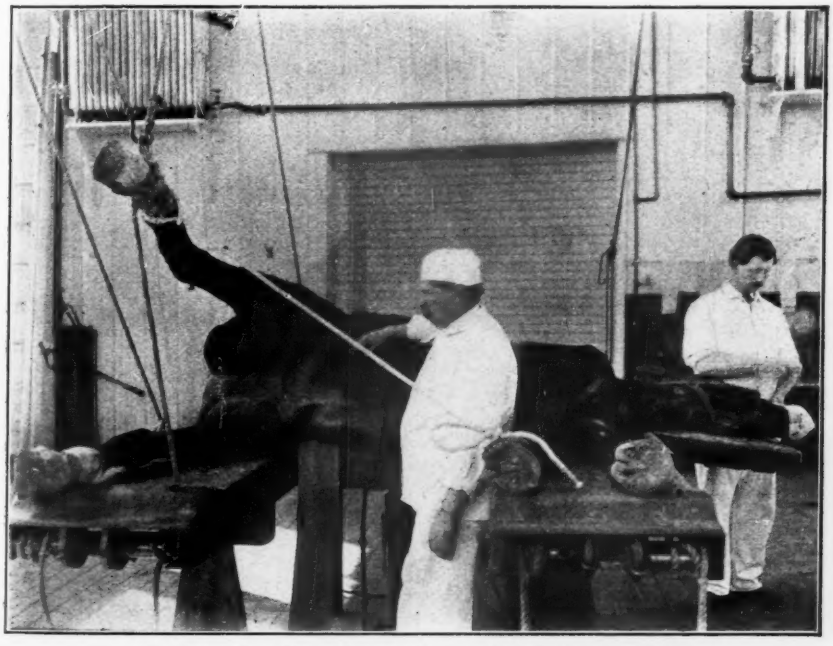

FIG. IX. NEW YORK STATE VETERINARY COLLEGE TABLE.

In the same position as Fig. VIII, with a horse confined in position for cryptorchid castration The depressed head piece is used so that the animal's nose is lower down than the poll, rendering chloroform anæsthesia more safe. The central piece is removed and the operator stands against the ventral surface of the body of the animal between the anterior and posterior limbs. The right hind limb is drawn upward by means of two over-head pulleys and the right inguinal region is thoroughly opened. The posterior confining strap or girth marked D, in Fig VI has been released and dropped out of the way and the position of the patient made secure by fixing the tail to the upper border of the table. It will be seen that the ventral surface of the body is at a convenient height for operating, with operator in standing position.

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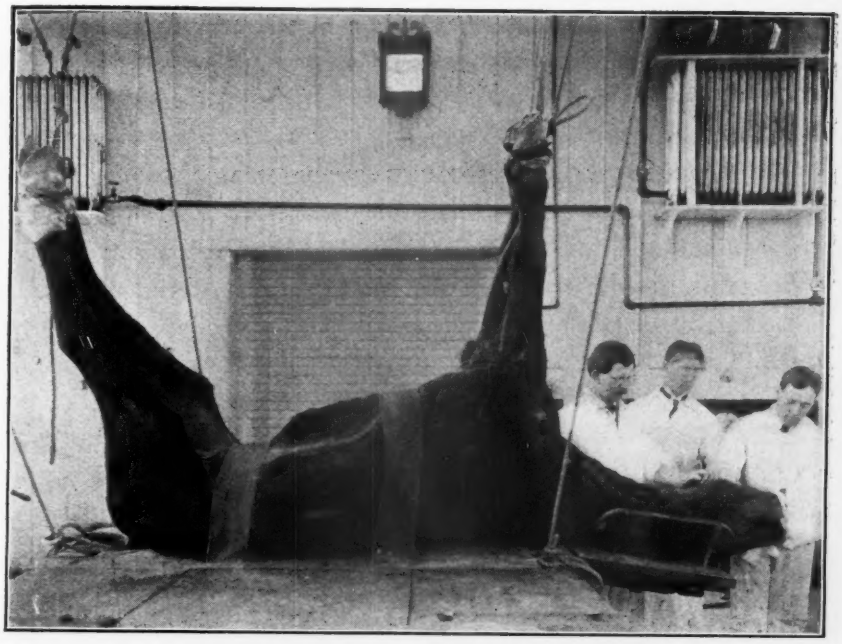

FIG. X. NEW YORK STATE VETERINARY COLLEGE TABLE.

In horizontal position with an animal secured in position for operating for roaring. The depressed head piece is used and on either side of the head is placed a flange-like support, K, forming a sort of groove or trough in which the patient's head rests securely. The dorsal position of the animal is maintained by means of four over-head pulleys acting upon the feet. It is shown that three assistants are in an available position for aiding on one side of the head and neck and an equal number may as readily approach the part from the opposite side, thus showing that it is freely approachable from any direction.

surgery of our domestic animals, and that its use must constantly increase as surgery advances. With increased use the table must undergo constant improvement and ultimately become a more perfect machine than at present; but we feel that it has already advanced to that point of development where its employment is fully warranted by the highest professional considerations. One objection which is frequently urged against operating tables, by those who have operated under anæsthesia, is that it requires a long time before the animal is in a condition to be placed upon his feet direct from the apparatus, necessitating much waiting and some risk of attempting to get the animal upon his feet while yet unable to stand. We obviate this difficulty by having a small wagon, or what may be termed a transfer ambulance, upon which the horse is placed immediately after the operation, still under the anæsthetic, and is conveyed to a stall or other suitable place for recovery. This wagon is so constructed that it is run alongside the operating table, it being slightly lower than the latter, and the animal is slid from it to the ambulance, drawn to the desired place and unloaded by means of sliding him down an inclined plane or broad skid, which can be attached to it at any point. If such arrangement is not desirable, and a suitable place for recovery is close at hand, a broad inclined plane may be arranged, upon which the horse can be readily slid to a suitable bed, where he can await recovery. There are also other tables, especially in Continental Europe, which can be dropped upon a level with the floor and the animal allowed to recover from the anæsthetic and get upon his feet from the apparatus itself; but we prefer getting the patient off the table and out of the operating room immediately.

The cost of operating tables has been urged as a powerful argument against their use; but it is incorrect to state that they are highly expensive or that they exceed the available resources of any veterinarian commanding a moderate income. The Vinsot apparatus is said to cost in this country about $700; the table in use in the New York State Veterinary College can

be erected for about $300; the Kyle Bros. table is sold at $100, and the Kansas City table at $75. The veterinarian need not buy a table, but can readily imitate all the most valuable features of any one of them, except, possibly, the Vinsot apparatus, and get a workable machine at a very moderate cost. For example, if one would place four solid posts in the floor and provide two heavy hinges by which he could attach the table top to two of these parts, he would have a foundation for the table which we use; he can operate it with ropes and pulleys, which cost but a nominal sum, and the table top he can make himself of hard wood, which will cost no prohibitive amount; and in the same way any of these tables may be imitated by the home-made machine, which although less attractive and possibly less secure and durable in construction, will answer all the essential purposes of the very best table made, and will cost but a small amount for material. We do not recommend a cheap table for the veterinarian who can secure a better one, but we hold that the item of expense to install a practical table is not a good argument against it. The best eventually becomes the cheapest, but we admit that under certain conditions the veterinarian may be forced to get along with the temporary structure.

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DEGREES OF SENSE.—There's "fine sense" and "coarse sense," each good in its way; but the man who has horse sense knows when to say "neigh."

DR. MOSES JACOB, Knoxville, Tenn., has an interesting article in the September *Iowa–Nebraska Veterinary Bulletin*, entitled "Ill Effects Sometimes Produced on Horses and Mules Pastured Exclusively Upon Alsike."

CYSTICERCUS CELLULOSA DISAPPEARING FROM MANILA.—The following from Veterinarian McMullen, of the Board of Agriculture, Philippine Islands, under date of July 17: "Several years ago nineteen hogs were condemned on visible post-mortem inspection for cysticercus cellulosa in one day at the abattoir in Manila, and the record for the same disease from January 1 to July 1, 1906, is only thirty-five condemnations, with about the same number of animals slaughtered during both periods mentioned."

# OUR INSECT ENEMIES.

By W. H. Dalrymple, M. R. C. V. S., Louisiana State University.

Presented to the Forty-Third Annual Meeting of the American Veterinary Medical Association at New Haven, Conn., August 21-24, 1906.

In order that ancient usage may not be wholly set aside, I presume I may be permitted to offer the somewhat customary apology of not having had sufficient time at my disposal to prepare a paper, or, at least, a production worthy of presentation at this our annual gathering of America's representative veterinarians.

Stereotyped as the above prelude may seem, it is nevertheless true, as my time has been very fully occupied with various and sundry duties for the past few months. Still, it is quite a compliment, I take it, to be invited to occupy the "rostrum" on this great annual occasion; and when a member is asked, he ought to consider it both an honor and a duty to respond, and endeavor to add his contribution, however small, to the sum of knowledge in connection with the various branches of our noble profession.

I must say, however, after seriously thinking the matter over, that I have been anything but happy in the selection of the subject which I hurriedly handed to our worthy Secretary, and the more I thought over it, the more I wondered how I would treat it, and from whence was to come the material. In fact, the acceptance was given provisionally, viz., that if the blanks could not be filled with papers from some of the younger members, or those who had not previously occupied a place on the program, I would be glad to do what I could to help our Secretary out.

"Hope springs eternal in the human breast," says Pope; and so it did in mine, for a time, at least, or until I received the June number of the Review, and saw, in cold type, "Our Insect Enemies," with my name attached to it; then, of course, all my hopes of securing a reprieve were blasted.

It has occurred to me, and I have no doubt others may have been similarly impressed, that the subject which I have chosen would have found a more suitable habitat in, and have been more in keeping with discussions usually occupying the attention of, an association of economic entomologists, than one composed of members of the veterinary profession.

Then, the matter presented itself to my mind from another standpoint: Some of us may take the position, although I would prefer to believe not, that insect agencies which are prejudicial to the interests of the owner of live stock, should be considered our friends rather than our enemies. Personally, however, I cannot get my own consent to subscribe to any such selfish or contracted view of the matter.

When that great handmaiden of physiology, Hygiene, or the art of preserving health, was first taken hold of and advocated by the broader minds of the medical profession, there were some of the "lesser lights," with vision more contracted as to the future, who could see nothing but calamity bearing down upon their calling, and at once thought that their occupation was doomed. We all know, however, how ephemeral such a view has turned out to be; nothing more than an "ignis fatuus," so to speak, and that the practice and the income of the leading physician of to-day have not suffered because of his advocacy and practice of that art which, according to the immortal Parkes, "aims at rendering growth more perfect, decay less rapid, life more vigorous, death more remote."

I take it, therefore, that as we are the logical conservers of the live stock health, and, necessarily, wealth, of the country, whatever agencies—insect agencies in this case—are at work which tend to jeopardize the interests of the stock owner, are *our* enemies as well as his.

Whenever I hear of a medical practitioner, whether human or veterinary, being afraid of advocating too much along hygienic lines in case of its militating against his interests, from the therapeutic side, I am reminded of the famous remark attributed to Admiral Schley, I believe, after that little sea fight

against the Spaniard down about Santiago Bay, that "there was glory enough for all."

I have no doubt there will always be glory enough, room enough and work enough for all of us who merit such, even should that "odorous enemy," the automobile, keep on increasing in numbers for some considerable time to come.

Perhaps, even at this late moment, the drift of my paper might be more fully appreciated if I should change the caption to read, "Our Insect-Transmitters of Disease."

It has been ascertained in recent years that insects of various kinds play such an important part in the transmission of diseases, both in man and the lower animals, that it should behoove the practitioner of medicine, whether human or comparative, to devote some little time to a study of the subject so as to become reasonably familiar with the life history and habits of those forms, which either mechanically transmit, or act the part of secondary, or intermediate hosts for, pathogenic organisms, whether of vegetable or animal nature. Of course the fact is apparent, that the broad field of medicine is so extensively and rapidly widening its scope, that it is simply a matter of impossibility for the busy practitioner to spare the time to go deeply into each and every phase of a study that might even be of benefit to him. But, it is surprising how little time is really required if he will but keep fairly abreast of his current professional literature—the REVIEW, for example. There are others doing the heavy end of the work for him, and, now-a-days, anything of moment, anywhere, finds its way into medical and veterinary medical journals, and is served up for him in most concise, lucid and readable shape.

There are several very convincing illustrations of the importance of a working knowledge of certain forms of insect life, two of which (if we include the cattle tick as an insect) are to be found in my own section of the country. Had it not been for the far-reaching discovery that a single genus of mosquitoes —the Stegomyia—was one of two hosts of the yellow fever organism—the human vertebrate being the other, the greater

portion of the Southern States would, probably, to-day, have been in the grasp of a fatal epidemic of "yellow jack." But, by intelligent and indefatigable efforts, based upon a knowledge of the life history and habits of this mosquito, directed toward its destruction, our citizens are now living in comparative unconcern, being convinced of the truth which has been established as the result of the classic work done by those who made the subject their special study.

I feel sure you must all be aware of the part played by the Boöphilus annulatus, the common cattle-tick of this country, in the transmission of Texas or tick fever; and you may be able to realize, to some extent, at least, its untoward effects as a parasite on cattle. But it may be news to some members of the Association that the estimated annual loss to the Southern States, or, at all events, that portion of them below the Federal Quarantine Line, occasioned solely by ticks, is $40,000,000 or thereabouts. In fact this parasite recently assumed such prominence as to get himself recognized by Congress. It was only last spring that he was the occasion of a special hearing before the Agricultural Committee of the national House of Representatives. Unfortunately for his "tickship," however, he got the worst of it, as upon the recommendation of Mr. Wadsworth's Committee, Congress appropriated $65,000, and which was later, I understand, brought up to over $80,000, for his extermination from the Southern States by coöperative action of the Federal and State authorities.

When this momentous piece of work has been completed, and the "tick" in this country lives only in history, then it can be said, that the far-reaching achievement was made possible, solely, through accurate knowledge of the life history and habits of this most expensive parasite, a good deal of which was gained through the efforts of the entomological department of the institution with which I have the honor of being connected.

It might be interesting to pause here just for a moment to refer to the apparently remarkable methods which some of

these lowly forms of animal llfe—the Protozoa—adopt for the perpetuation of their existence. For example, the limitation of the developmental cycle of both the protozoan of yellow fever (for its behavior seems to warrant the belief that it is such, although it has not, as yet, been discovered either in the human being or in the mosquito) and that of Southern cattle fever, is, in the first case, a single genus of mosquitoes—the Stegomyia, and a single vertebrate—Man; and in the second, the one species of tick—*Boöphilus annulatus* (in this country at least), and the one vertebrate—the Ox, which seems to conform, however, to a natural zoölogical law in their case, but does not agree with our present knowledge of the life history of bacteria, or, in order to distinguish them—vegetable germs.

Insects have also been found to play an important role in the transmission of the causal factors of another class of protozoal diseases known as "Trypanosomiasis," the organisms, which are unicellular, being flagellate, or provided with attenuated whip-like processes, usually at the anterior end, but occasionally, in some species, with one at each end.

I believe it was in 1877 that Lewis detected flagellate organisms (trypanosomes) in the blood of apparently healthy rats, and which have since been given the name "*Trypanosoma Lewisi*," from their discoverer.

In 1895, Bruce conducted a series of experiments in Zululand, and from which he concluded that the Tsetse fly (*Glossina morsitans*) acts as a carrier of infection in Nagana, or tsetse-fly disease in Africa, the trypanosome being named "*Trypanosoma Brucei.*"

Later, Rogers, in the Proceedings of the Royal Society, mentions the result of a similar research on the rôle played by biting flies in the direct transmission of the organism of surra—the "*Trypanosoma Evansi.*" He claims his experience demonstrated that the disease might readily be carried by the bites of horse flies from one animal to another in the same stable.

In 1902, Schilling stated that, at least two species of flies can transmit the infection in dogs.

Curry, in Manila, found a fly, the "Stomoxys calcitrans," to be the principal agent in conveying the disease.

Theiler, in South Africa, made some experiments with a Hippobosca, frequently met with in cattle, and considers it proved that these flies are a medium of the propagation of trypanosomiasis, and, also, other blood-sucking flies, such as the "Tabanidæ."

Sivori and Lecler, in South America, carried out numerous experiments, and claim to have transmitted the disease to the horse, monkey and guinea-pig by biting flies, also by means of the common house fly (musca domestica) from an infected dog with a wound to a healthy dog with a wound.

I might also mention dourine, or maladie de coit, which is another trypanosomiasis and caused by the "*Trypanosoma equiperdum*," but only to remark that, so far as is at present known, this is the only mammalian trypanosome which is not conveyed by the medium of a biting insect.

The research work which has been conducted in recent years seems to have explained fully the part played by mosquitoes and ticks in the spread of the protozoal diseases, yellow fever, malaria, tick fever or "Bovine piroplasmosis," etc., but, in trypanosomiasis, there seems to be a certain amount of both clinical and experimental evidence in support of the supposition that flies act as direct carriers of the infection, and that they, while feeding on a sick animal, take up the trypanosomes into the stomach or on to the exterior of the body, and by feeding on a healthy animal, they inoculate it from the internal or external source. This latter statement I take from an article by Capt. J. D. E. Holmes, M. R. C. V. S., of the Indian Civil Veterinary Department, on "the rôle played by biting flies in the spread of trypanosomiasis."

Here, then, we have an insect-borne condition—trypanosomiasis, of almost world-wide significance, so to speak. It is found in the nagana, or tsetse-fly disease of Africa; the surra of India, China, and the East; the mal de caderas on the Pampas of South America, etc.

The life history of some of the forms has not yet been elucidated, but it seems reasonably clear that these organisms pass through one phase in their life-cycle in the body of some transmitting agent, which is probably a blood-sucking insect.

The discovery of MacNeal and Novy of a method by which such protozoal forms may be cultivated in the laboratory marks quite an advance, but so far as I am aware, has not availed as yet to furnish any method of treatment for the diseases occasioned by the organisms.

The Tabanids, horse, or gad flies, are enemies to the stock owner, not only on account of their irritating and blood-sucking propensities, but they are frequently spoken of as (and there seems little reason to doubt the assertion) transmitters of pathogenic organisms. In fact, the circumstantial evidence, at least, is so strong with us in the Lower Mississippi Valley, that we cannot but attribute to them the periodic rapid and wide spread of anthrax, as the seasons in which the disease is most prevalent and covering the greatest area, are those in which these flies are most numerous—almost to the plague-point in the stricken sections.

I am inclined to the opinion that the part played by these insects is a mechanical one, piercing some capillary vessel with mouth-parts contaminated by the germ-laden blood previously abstracted from an anthrax victim. There is the possibility, however, although the matter requires further investigation, of the virus being transmitted after having been taken into the stomach of the fly. Still, it would seem that the occurrence of an outbreak of external anthrax (the carbuncular form) is so close upon the appearance of the tabanids, to cause some doubt as to this method of transmission. That is, if we reason by analogy between the mosquito and the time it takes to transmit the morbific material of yellow fever, for example, which is in the neighborhood of twelve days after taking the organism into its own body. In the latter case, and in that of malaria, the mosquito is an obligate host of the germ; that is, the organism requires to pass a part of its existence (generally the a-sexual

stage, I believe,) in the body of the insect. Such is the case with the protozoa; but, with vegetable germs (bacteria) it does not appear to be so, as they, in the spore stage at least, can maintain an independent existence outside of the body. So that, if bacterial infection is transmitted by this family of flies, the Tabanidæ, which is quite an extensive one, of which there seems to be fairly good evidence, it is mechanical, through the medium of soiled mouth-parts.

What I have just spoken of might be termed direct transmission. But it seems to me possible that there may be an indirect method which also requires further looking into. The resting-places of these tabanids are often on herbage, grasses, etc. Should the bacilli, taken into their stomachs with the blood, pass out with the ordure of the insects on to the grazing, and in an undevitalized condition, so to speak, and the animal consume the contaminated aliment, there is the possibility, it seems to me, that infection may indirectly be transmitted in this way. I am pleased to be able to say that our Experiment Station, in conjunction with our State Crop Pest Commission, has at present in the field both an entomologist and a bacteriologist making some investigations into the life-history of these flies, and also along the lines just mentioned; and the results of their work will, no doubt, be of very general interest, especially in those parts where similar conditions prevail.

If it should prove to be absolutely so, that these blood-sucking tabanids, or horse-flies, carry anthrax organisms from one animal to another, it seems possible that other varieties of insects which puncture the integument, may also do so; and here I might just allude to mosquitoes, and to a small black fly, or gnat, very prevalent at times in the Southern States, and, I think, in some parts of the West also, known as the "buffalo-gnat," and belonging to the genus "Simulium." I need not take up the time of the Association discussing the mosquito, as no doubt most of you have had personal experience of the penetrating effect of this pest, but I imagine the buffalo-gnat may

not be quite so familiar to many of you. It is a dipterous insect, of course, and I imagine receives its name from having a little "bump" behind its head, or on top of its thorax. I believe it is aquatic during some part of its life-history, probably in the larval stage, and is most numerous during seasons when the creeks and branches are congested. It is in the imago, or fly stage, however, that it proves such an annoyance to stock, often destroying many that are exposed in the neighborhood of woods, thickets, etc. It is no uncommon sight to witness hundreds of little "smokes" all over the fields that are being ploughed, in such vicinities, in order to drive off the gnats and protect the plough teams from their attacks. When the gnats are excessively numerous, it is customary to have small vessels filled with some smouldering, smoking material, suspended from some part of the gears in front to drive the pests away and prevent their gaining access to the nasal passages of the plough animals. I am not aware just how death is produced by these insects, but during some seasons, in certain districts frequented by them, we hear of numerous fatalities among horses and mules especially.

I am sure there are quite a number of insects of various kinds which you must all recall, and upon which, suspicion rests as being agents in the transmission, in some way, of pathogenic organisms, or of setting up conditions which favor the introduction of septic germs. Nature is full of them of one kind and another. I will not, therefore, trespass upon your patience and forbearance further, except to refer, briefly, to two others which are, more or less, of economic importance. These are the "screw-worm-fly" (*Chrysomyia macellaria*), and the "horn-fly" (*Hæmatobia serrata*). The first of these flies is, if I mistake not, a scavenging insect, and its distribution ranges from Canada to Patagonia; but in the years 1891 and 1892, it became one of the most destructive pests to live stock that we in the Gulf States have almost ever experienced, and costing our stock-owners many thousands of dollars. Its numbers were appalling, and its method of attack was to oviposit on any raw,

bleeding, or abraded surface. A small blood-speck resulting from the puncture of a wire-fence-barb, was sufficient to attract its attention as a suitable spot on which to deposit its eggs; and the fresh and raw umbilicus of a foal or calf, was one of its favorite sites. Each female fly that came along seemed to go through the ovipositing act until the point of attack was one white mass of ova. In a few hours the eggs hatched, and then the destructive work of the larvæ commenced, boring their way into the tissues, and, when starting at the umbilicus, into the abdominal cavity.

Not only did animals suffer, but people also were victimized, and a few, I believe, died. In the latter case, the fly deposited its eggs where some abrasion existed in the neighborhood of the nasal openings, attacking while the individual was asleep out in the open. In a short while the young larvæ could find their way into the sinuses, etc. The victims were usually negro hands who had sought the "arms of Morpheus" to forget their troubles for an hour or two. I recollect one negro coming to me to seek advice about the screw-worms, knowing, I presume, that I had had a good deal to do with the conditions prevailing at the time amongst the stock. He informed me he had the "grubs," and after my having expressed doubt as to the correctness of his diagnosis, he said he knew he had them, because "he could hear the flies buzzin around in his head." Probably he was right, as his mental condition at the time did not indicate to me that his cranial cavity was altogether or *completely* filled with brain matter.

A very interesting point arises here in connection with this plague of flies. As they are scavengers, as I have previously mentioned and it is their custom to live upon dead matter, why was it that their habit was so changed, temporarily, as to induce them to attack living tissues? They are widely distributed now, and always are, to a more or less considerable extent, but I do not recall having heard of their attacking the living animal since the years alluded to. Nature's methods though unerring, are, indeed, difficult to penetrate at times.

I presume the entomologist would tell us that their customary food supply had become scarce, and that they were forced to the change of habit in order to obtain food and to be able to reproduce and perpetuate themselves.

Our last number is the "Horn-fly," a foreign importation which must have already cost the country a considerable sum of money, as it seems to be, like the imported sparrow, scattered all over the United States. It is a blood-sucker, and resembles somewhat the common house-fly in appearance, though smaller. On account of its habit of feeding, it is possible that it, too, may be a transmitter of pathogenic organisms, but it attracts attention chiefly because of its persistent worry and irritation to cattle, thereby interfering with an adequate milk secretion in dairy animals, and the rapid laying on of flesh in the case of our beef-producing cattle.

So far as I can remember, this foreign pest gained access to our shores about 1887 with some cattle imported from the other side of the Atlantic, and there is every indication that it has now become a thoroughly naturalized citizen of the "land of liberty," with a free pass into any and every nook and corner of this broad country.

When feeding, it attacks the sides of the animal's chest, and when disturbed, changes its position from one side to the other in order to protect itself. Its resting periods are usually spent around the base of the horns, in horned animals, from which habit I presume it receives its name. Its breeding place is the fresh excrement deposited by cattle, where it lays its eggs, and in which the larval stage seems to be passed. This being the case, if the fresh droppings from cattle were systematically limed, or removed from around stables, or other places where cattle congregate outside, myriads of these insects would be destroyed in one or other of the immature stages. However, I presume there will always be sufficient of this ordure left exposed to supply this irritating and expensive little pest with breeding quarters. Hence the prospect for its destruction or eradication, seems anything but bright in the immediate future,

at least. In fact, it looks as though this insect, like the poor, is always to be with us.

Just a word or two more, and I have done. In a previous part of my paper I made the statement, that we, as veterinarians, were the logical conservers of the animal health and wealth of the country. This being so, it is our province and becomes our bounden duty to use every means within our power to protect those interests which play such a formidable part in our national material welfare. The methods to accomplish this end are, and will have to continue to be, the control and destruction of these agencies, largely parasitic in their nature, belonging to the lower forms of life, which prey upon the higher species. Or, in other words, we must sacrifice the lower in the interest of the higher creatures, for the benefit of humanity and of our material prosperity. This law of sacrifice, however, is in reality, one of Nature's own laws, and is evidenced all along the line, or, as I heard an eminent Chicago divine once express it, "from the microbe to Calvary."

But, apart from the purely economic aspect, and taking a more inquiring view of the subject, let us ask the reason for all this incessant turmoil going on in Nature; this never-ending fighting and battling for existence between the lowly microbe on the one hand, with its auxiliary forces, in some instances in the form of some secondary or intermediary host, and the mighty mammal on the other? Is it not simply the carrying out of one of Nature's plans, in order that they may find nourishment, live, and be able to reproduce and perpetuate their kind? And, if we pull the folds of the curtain further apart, and obtain a little closer insight into this apparent mystery of Nature, may we not find revealed to us, over and above all, that she, through the execution of her inexorable laws, and the working of her well-ordered plans, is but endeavoring to maintain equilibrium, in the various forms of life, throughout the entire scope of her endless domain?

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DR. M. H. REYNOLDS recently judged the horses at the La Crosse Interstate Fair.

# THE EXPANSIVE FIELD OF THE VETERINARIAN.

By Leonard Pearson, Dean.

An Address delivered at the Opening of the Veterinary Department of the University of Pennsylvania, Sept. 28, 1906.

It is gratifying to be able to welcome to the University such a large number of earnest young men as are entering upon the study of veterinary medicine this year. And it is a pleasure to again greet the students of the upper classes who have returned after a season of recreation. You are all to be congratulated upon the fact that the construction of the new veterinary building is now underway, and that it will be pushed steadily to completion. The years we have spent in temporary quarters have been trying to students and teachers alike, but the fact that the quality of your work and your enthusiasm did not diminish under these unpleasant conditions speaks strongly for the earnestness of your purpose and testifies to the inherent importance of the work of the school. A large part of the new building will be finished next summer and will be in use at the beginning of the next college year.

You are also to be congratulated on the broadening outlook for the veterinarian, the enlarged field of work that is awaiting you. The scope of veterinary work has grown steadily since the establishment of the first American veterinary school, about thirty-five years ago. As the value of the veterinary sciences has been demonstrated, increased opportunities have been given to practicing veterinarians, increased responsibilities have been placed upon public veterinary officials and the technical schools have been improved. While this growth may seem to be slow, it has been substantial and is continuing steadily. The veterinary profession of this country is very strong as compared to its condition twenty-five years ago, but still it is weak as compared to the status of the veterinary profession in the older countries of Europe. This fact should serve to encourage us to strengthen our work, to improve our opportunities and to demonstrate, through valuable service, the advantages to the

nation that result from the development of the veterinary sciences and from the performance of intelligent veterinary practice.

Our young profession has already a number of notable achievements to its credit. Two of the most destructive of the bovine scourges of the old world, lung fever and foot-and-mouth disease, have been eradicated from our soil in the face of difficulties that would severely have tried the ability of the older and better organized veterinary systems of Europe. The extermination of these diseases and their exclusion by the inspection and quarantine of cattle from abroad means far more to the well-being and prosperity of this country than is generally appreciated. Upon a very conservative basis of estimation, it is safe to say that the country is better off to the extent of $75,000,000 to $100,000,000 a year than it would be if these diseases had been permitted to go unchecked and uncontrolled.

In the field of research, some important discoveries of world-wide importance have been made, notably in relation to Texas fever, tuberculosis, hog cholera and the parasitic diseases of domestic animals. Such research work is of immeasurable service to agriculture and to public health and such discoveries are not only stepping stones but, oftentimes, they are bridges across chasms that have halted all development at a certain point.

In the fields of clinical medicine and surgery there has been less development because there has been less opportunity, through the absence of suitable equipments and facilities. This is a side of veterinary work that does not come within the province of public veterinary organizations such as the United States Bureau of Animal Industry and the state live stock sanitary boards, and it is under such public organizations that the principal veterinary developments of the country have been made. In the present work of our school, and in the plans for the future, we are doing all that is possible for us to do to develop this practical side of the veterinary sciences, because we realize that it is upon true efficacy in work of this kind that the success of the veterinarian chiefly depends, and it is for practical

clinical work and surgery that the veterinarian is most frequently called upon by the owners of animals. The basis for this kind of work at the present day is wholly different from the basis that was regarded as satisfactory only a few years ago. The importance of the fundamental sciences of anatomy, physiology, chemistry and biology, including pathology and bacteriology, are being constantly more fully recognized in their relations to the practice of medicine and surgery. In performing an operation it is not only necessary to know the gross anatomy of the parts and the bloodvessels that have to be ligated or avoided; the operator now requires a working knowledge of physiology and pathology of the microbic infections that may occur and the means that may be employed to avoid or counteract them. The clinician who is not competent to use laboratory methods of diagnosis and to reinforce his estimate of the physical signs of disease by means of chemical, microscopic, biologic and inoculation tests is not in position to practice veterinary medicine as a science or to render to his clients the service that they may fairly expect.

In the field of public employ, there have been many changes and developments during the past year, and especially in that branch of work that falls under the head of meat inspection. Following the publication of some sensational charges against the products and methods or the packing houses in Chicago, a law was enacted by Congress which provides for the regulation and extension of the meat inspection service by the United States government, so that it now covers all meat and practically all meat products prepared for export or for interstate trade. This extension of the meat inspection service goes into effect October first. The most important parts of this public health work are to be performed by veterinarians. The reason for the selection of veterinarians for this service is that they are the men of all others whose training best fits them for the thorough performance of the work. Meat inspection consists in the recognition of the evidences of disease both in the living and in the slaughtered animal. It is based on anatomy and

pathology, and the anatomy and pathology of the domestic animals are taught only in veterinary schools. In addition to this knowledge, the meat inspector must be informed as to the characteristics, the production and the preparation for market of all of the various food producing animals, so that it is a very broad subject and it embraces much of the total fund of the veterinarian's equipment.

For supporting this great system of federal meat inspection, Congress has appropriated $3,000,000. The sudden expansion of this service has placed a great responsibility upon the veterinary profession and upon the veterinary schools. Upon us all will devolve the duty of providing the knowledge and the men for this task, and upon us will rest in large part the responsibility for the character and usefulness of the inspection. If the veterinary profession rises to the occasion, as we may fairly expect it to do, the benefits of meat inspection will become so manifest that the system will gradually be extended to cover establishments engaged in local business as well as in interstate trade. Of course, the inspection of local establishments cannot be under federal but must be under state or municipal direction. As it is, only the meats prepared in certain establishments are inspected, while those prepared in others are not inspected, for the reason that federal control cannot extend to concerns engaged in business only in one state. But there is as much, if not more, sanitary reason for the inspection of these smaller slaughter houses and their products as for the inspection of the large ones. The city of Philadelphia has commenced to recognize its needs and duties in this respect, and has organized a small bureau of meat inspection, which is good so far as it goes, but which is quite too small to cope with the vast amount of work that needs attention. It is only necessary to say that there are more than 140 slaughter houses in Philadelphia, to indicate the size of this problem. The encouraging feature is that a beginning has been made.

*The federal government cannot be expected to continue indefinitely to inspect meat that is prepared at establishments en-*

*gaged in interstate trade if the states and localities that are supplied from these establishments are not sufficiently interested to examine the products of their local slaughter houses that prepare meats for use within their own borders.*

There is at this time great interest in the whole subject of pure food. The carelessness and cupidity of many manufacturers of food products have become so great as to amount to a national scandal. The extent to which foods have been misrepresented and mislabelled, adulterated, preserved by the use of chemical antiseptics, artificially colored and derived from improper sources, is very great. The public has now become so fully aroused to the extent and dangers of these practices that state and national laws have been enacted which have for their object the protection of the consumer against the results of such injurious practices. Of course such laws are valueless without adequate provision for their enforcement and the enforcement of the laws relating to foods of animal origin will devolve largely upon veterinarians, and they must be prepared to accept this responsibility.

Aside from the important public health work that falls upon the veterinarian, he has large responsibilities in the protection and development of animal husbandry and of animal industry. This means that the work of the veterinarian is of prime importance to agriculture because improved, provident systems of agriculture are based very largely upon successful animal husbandry. *The close relationship that exists between the veterinarian and agriculture should never be lost sight of,* for the reason that it should be the object of every veterinarian to do all in his power to develop and to strengthen this basic industry that is so closely linked with his profession, and upon which the prosperity and the security of the country so largely depends.

The industrial development of the United States has gone so far beyond precedent and expectation and has been so amazing that there has developed in some quarters the impression that this is to become and to remain an industrial country,

that agriculture is of secondary importance and that it can take care of itself. But all history shows that one of the greatest sources of national strength, after an intelligent and patriotic population, is *fertile soil.* I have often dwelt on this subject and have traced the relation of the live stock industry to better systems of agriculture, through the conservation and enhancement of the fertility of the soil, and have endeavored to show the necessity for the cultivation and development of the veterinary sciences in order that animal husbandry may be placed on a more secure and profitable basis, to the end that agriculture and the well-being of the country may be rendered more secure and be advanced.

Quite recently, the importance of the conservation of the fertility of the soil has been widely discussed in connection with an address delivered the third of September, at St. Paul, by Mr. James J. Hill, President of the Great Northern Railway. Mr. Hill calls attention to the fact that there are but four great sources of national wealth: the sea, the forest, the mines and the soil. As the sea does not supply more than two or three per cent. of man's food, it is of little importance in this connection. The forests are rapidly disappearing, and there need be no hesitation in accepting his statement to the effect that in twenty years there will be nowhere east of the Rocky mountains a timber product of importance, and that we shall then be compelled to begin in earnest the slow process of re-foresting. Our mines are popularly regarded as inexhaustible, but it should be remembered that a very large proportion, if not nearly all, of the tremendous mineral wealth of the country has been located and its amount approximately determined. As Mr. Hill says: "What is taken from the mines can never be replaced. Through all eternity, as far as we can see, the consumption of mineral wealth stored in the ground must be a finality. The possible gross product is mathematically limited. The adaptation of this to future uses should be a matter of infinitely greater anxiety than the present balance sheet of a business concern. Yet the singular fact is that, among a people convinced that

they are grounded in the rudiments of political economy, the progressive exhaustion of this precious resource is everywhere heralded as a triumph of enterprise and a gauge of national prosperity. The nation publishes periodically the record of a scattering of assets never to be regained, and waits, with a smile of complacence, for general congratulation." He shows, further, that at the present enormous rate of consumption and increase in use, our best coal and iron deposits will have become so exhausted in fifty years that the remainder can be used only at considerably enhanced cost, and that this will probably compel the entire rearrangement of industries and revolutionize the common lot and common life.

The fourth great national asset is *the soil.* Mr. Hill says that it is upon agriculture that this nation must rely, and not upon our rapidly diminishing mineral resources nor upon manufacturing, wherein there is the probability that we shall be under bid and defeated in the markets of the world, by the cheap labor of the Orient. This is not a fanciful picture, but it is the deliberate judgment and grave warning of one of the greatest American captains of industry, and he supports his opinion by statistics and logical reasoning, as well as by the facts of history.

The lesson to be drawn is that the agriculture of the United States must be developed. As stated by Mr. Hill: "If we are to walk safely in the way of wisdom, there is much to be done. It is time to begin. There must be, first, a return to conservative and economic methods, a readjustment of national ideas, such as to place agriculture, and its claims to the best intelligence and the highest skill that the country affords, in the very forefront. There must be a national revolt against the worship of manufacture and trade as the only forms of progressive activity, and the false notion that wealth built upon these at the sacrifice of the fundamental form of wealth production can endure. A clear recognition on the part of the whole people, from the highest down to the lowest, that the tillage of the soil is the natural and most desirable occupation for man, to which every

other is subsidiary, and to which all else must in the end yield, is the first requisite." This confirms the opinion expressed by Benjamin Franklin, the founder of the University of Pennsylvania, as expressed in these words: "Manufactures are esteemed beyond their real worth, for the true source of riches is husbandry."

The development of a conservative agriculture depends in very large part upon animal husbandry. It is necessary to have animals not merely to do the work on the farm and to take the products to market, but it is necessary to have animals to manufacture the crude products of the farm into more useful and more saleable commodities; to refine the rougher and more bulky crops and to convert a part of them into manure, without which agriculture is impossible.

The security of animal husbandry and its development depend in large measure, indeed, essentially, on the protection of animals against devastating diseases, so the conclusion is justified that, in a high degree, *the work of the veterinarian is necessary to the development of the agriculture of the country.* This is a work in which any man with ability and high aims may be proud to take part.

Before I close, I wish to refer to another subject and I speak of it now, at the beginning of the college year, because I deem it to be of great importance. I refer to the Veterinary Medical Society, that has been organized by the students in the Veterinary School. The members of this Society have a meeting every two weeks, at which papers are read and debates and discussions are held. There is an occasional social meeting at which there is some lighter form of entertainment. I am convinced that this organization is of great service to its members. Through its activities they become accustomed to parliamentary usages and to the presentation of their ideas to an audience. It is the kind of training that every professional man needs and that he must have if he is to use his talents to best advantage. I hope that all of you will join and take an active interest in your Veterinary Society.

# THE MICROSCOPE AND OUR PROFESSION.

By C. H. Schultz, McKillip Veterinary College, 1906.

Read before the McKillip Veterinary College Medical Society.

You have asked me to read you a paper. Why? For I scarcely know how to begin, as there is nothing original in me, save original sin!

When we look at the elementary facts to which is due the progress of the medical sciences, in the last half of the past century, we find three that eclipse all others: Microscopy, Bacteriology, Pathology.

The knowledge of the microscopic structure of the body has demonstrated to us many facts and conditions in regard to cause and changes, which take place during disease, and permits us to comprehend the disturbing process. In the last decade the perfection of bacteriological methods, our ability to study habits and actions of microörganisms has enabled us to isolate and study minutely many dangerous parasites. This is not only of importance from scientific-etiological point, to solve some theoretical problem, but gives us the knowledge necessary to study the cause of diseases and devise measures prophylactic and combative. It is always easier and cheaper to prevent than to cure. The large sums spent to produce animals and even plants that are resistant or immune to certain infectious diseases are a good investment, but this would be impossible without exact knowledge of the structure of the host or the peculiarity of the organism. After we know the habitat, the requirements of a microörganism, we can reason out what it will do to the host; we know how to look for it, how to identify, how to isolate it; all terms which are identical to diagnosis.

Here, then, is the common stepping stone, where the clinician and the laboratory worker meet. But is this the only point? I do not think so!

Nothing has stimulated medical thought as much as the investigation of the cause of disease. It required the combined

efforts of the best brains, the deepest thinkers during decades, before a good working-system even could be devised. All manner of trades were called in to help solve the problems as they arose. Only a few years ago a compound microscope was very expensive, clumsy. The basic principles of the microscope had to be studied. Professor Abbé, of Yena, studied refraction, the problems of distortion due to spherical and chromatic aberration. Glass of known fractive index was produced. More light was necessary; the Abbé condenser is the result. The focusing apparatus required careful adjustment, must be mechanically true, almost perfect. All these demands sharpened the wits of thousands of toilers; their efforts finally produced the beautiful, correct, balanced, permanent artificial eye, known the world over as the compound microscope.

This instrument required careful handling; the greater the magnification, the greater the difficulties, until we must admit, a point has been reached beyond which we may not go, must stop. What is the result of the presence of the 'scope? Anyone who begins to use a microscope will see at once that a wide field is opened to him, that before him lies a new world, a perfect wonderland; and the more we investigate the more do we realize that it is as large, as interesting, as the macroscopic world.

First to attract our attention are the minute structures of the mineral kingdom, the formation of crystals while you watch the process under the lens. The distinction of vegetable structures from animal cells, the minute anatomy—microscopic anatomy of all the tissues: Histology. This brings us to Embryology, because we must study how tissue is formed, both during fœtal life, from the first segmentation of the ovum and during the generations of evolution. We study the rudimentary, simpler forms before we attempt the more complex structures. But we can't stop. Why does a disease kill, stop metabolism. As the bright child mind puts it: What makes that lump?

Thus we enter Pathology, investigate the abnormal tissues.

Another step, we have found the changes, the inflamed cells, the nuclei that stain faintly; we see granules, or little rods; we see bacteria. We isolate them, study them, cultivate them, and become bacteriologists.

The microscopic study of an organism is only the lesser part, often it only confirms our diagnosis. We must observe and keep record of anything abnormal, then add the facts and draw conclusions. And this is the point where the microscope is the producer of such a marvelous change for the better education. It is the instrument, par excellence, that has stimulated research work and produced independent thinkers; developed the reasoning faculties of thousands of workers as nothing else has or ever will do. It limits no one. All manner of research, in all lines, under all conditions, are opened up to everybody, from the piscatorial embryologist in an out of the way fish hatchery to Dr. Loeb, with his bold, classical attempt to solve life.

No one knows to what point of exertion the brain of a laboratory rat has been stimulated; day after day they toil, read up, compare, only to find that they are as far as ever from their goal. New methods of producing disease artificially, a new variety of experimental animals, fixing fluids, hardening processes, then details of sectioning, later the staining methods, to bring out in the best manner, to demonstrate by a chemical reaction often, if a few cells are degenerated or not. A peculiarity of laboratory work is, that it proves or disproves; both are necessary, are of equal value, if only you keep record of the facts. A negative result is just as useful as a positive one. In the second condition we always have a fact that is useful to diagnose by exclusion—if we keep record of it. And this is an important point of all research work. Keep record of all your experiments, even the most simple ones, and publish your results.

To this fact is due our ability of going faster and farther. It gives the true reward to the bright mind that produces and devises something practical; it helps the world at large after-

wards, but brings him, who thought and studied, with few exceptions, no money. So often do we hear: stains by Grams', does not stain by Grams'. Here was a man whose keen brain brought forth a stain that divides all the microörganisms into two classes—such an important fact in their classification—but little is known of him. Golgi's method is often spoken of; few know man or method. Cotton for plugs in test tubes is used the world over, but not one in a thousand realizes its importance. Through these conscientious efforts, during the last four decades, have we developed what is summed up in the words: microscopic technique. And he who knows, masters many of its details, may then branch out and investigate according to his intellectual ability. There is then no limit to his work. Some day he will be quoted, referred to, because he has demonstrated some fact, and even applied it in a commercial, plebeian manner. We all recognize the value of tuberculin, mallein, and antitoxin, and many other similar products, all due to research work, made possible through the microscope. The laboratory worker can prove you in a few test tubes, that many streptococci cannot be made to grow in a medium, the acidity of which is more than + (plus) 1.0 pheno-phtaleine test. Hence when we meet a serious case of strepto-mammitis, due to the dangerous chains, and ask the owner of the animal: How often do you milk your cow? Oh, two or three times a day, doctor; we take good care of her! We can simply tell him: milk her once every other day, just a little, never empty the bag. The milk remains in the ductlets, produces lactic acid and kills the bacteria—cures. But how can you tell whether this simple treatment is indicated or not? By microscopic technique only? No, by a careful notice of the clinical symptoms; train your eye to it, add facts, draw conclusions. The same system applies here that permits Dr. McKillip to analyze lameness. So we see the laboratory worker and the practitioner meet again. Microscopic training is indispensable to the careful clinician, since it is the only way to find the important cause of many parasitic diseases. Says the microscope to the practitioner:

"If I knew you, and you knew me,
If both of us could clearly see,
I'm sure that we would differ less,
And clasp our hands in friendliness:
Our thoughts would pleasantly agree,
If I knew you, and you knew me."

A fundamental law of nature provides, that where there is sacrifice, there shall be a reward. The faithful laboratory rat, with wits sharpened by constant difficulties, some day becomes known through the press, establishes a reputation. He can find it out, the public says; a bright mind, has done so much; he knows, his fellow-workers say, and he will be quoted in the text-books as an authority in his particular line. Is that all? No, hardly. The world moves, we move with it, and to-day a good deal of social prestige, of standing in a social way, is sure to fall on the shoulders of any investigator, for every one recognizes the difficulties of his problems, his sacrifices, and watches with interest the progress he makes. The standing of a clever microscopist is assured in the profession; it is recognized as an accomplishment akin to a beautiful voice, musical talent or other intellectual qualities, which are all appreciated and admired by the cultured people.

It brings us to the level of the better educated physician. The fact that one can demonstrate the cause of a virulent outbreak of an infectious disease will soon draw attention to us. And what is real success in life? A little less time to commercialism, a little more time to go on record, to teach others, to gather some facts, observe, analyze, establish their co-relation, to help clear up one cloud of superstition that now blocks everybody's way, to carry the torch of knowledge a little beyond the lines of ignorance, to broaden the illuminate, beautiful field of science should be our aim. We cannot all be Darwins, Virchows, Pasteurs or Senns, but we should leave some mark, some improvement, some evidence of our presence on this globe, maybe a path or a foot-print only, that others may follow, and thus make life easier, more agreeable for posterity—That is success in life.

Indexed.

# INFECTIOUS CONJUNCTIVITIS OR ENZOÖTIC OPHTHALMIA IN CATTLE.

By R. H. McMullen, D. V. S., Veterinarian, Bureau of Agriculture, Philippine Islands.

In the month of April of this year, a number of Australian cattle were imported for breeding purposes by the Bureau of Agriculture of the Philippine Islands.

Immediately after the arrival of, and during the process of immunizing these animals against Texas fever and rinderpest, several of the calves developed symptoms of sore eyes, and they were treated in the customary manner. They made an apparently favorable recovery, and were then, at the conclusion of the Texas fever and rinderpest immunization, transferred to the Bureau's dairy farm at San Juan del Monte, Rizal, at which place there were already some fifty head of cattle.

The writer was detailed to take veterinary charge of the dairy farm on July 1st, and on that date found a herd of seventy-three cattle, approximately three-fourths of which had been infected with enzoötic ophthalmia in rapid succession following the date of the introduction of the Australian stock.

*Causes.*—From the clearly defined history of the outbreak, which occurred in the rainy season, it appears plausible that the origin and transmission of the disease were from a purely microbic source. An accessory cause was the low damp land upon which the cattle grazed.

*Symptoms.*—At the onset the head was protruded, the affected eyes were closed, and there was a profuse secretion of tears. There was very little purulent secretion. When opened the mucosa was swollen and of a deep red. The cornea became opaque, and in many instances small erosions occurred. The disease invariably ran a favorable course in about ten days, during which time the lacteal secretions were somewhat decreased, but there were no severe constitutional disorders. The opacity gradually disappeared and the erosions healed, leaving a slight cicatrix in some instances. Permanent loss of vision

did not occur in any case, nor has an affected eye suffered a second attack, although in a few instances both eyes of the same animal have been infected at different times.

*Treatment.*—The animals were immediately isolated in stalls, and the affected eyes were covered with a dark cloth tied to a specially-made halter. Local treatment consisted of bathing with a 1 : 100 solution of acid boric, and wetting the cloth with the same solution. The ulcers were treated successively with silver nitrate, 1 : 100, and pulverized calomel. The slight systemic disturbances were treated according to the symptoms presented.

Three American horses and two native ponies, which had been stabled in the same enclosure with the affected cattle, exhibited the disease in a very mild form.

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DR. S. H. WARD, Secretary of Minnesota Live Stock Sanitary Board, attended the Interstate Association of Live Stock Sanitary Boards, at Springfield, Ill., and was reëlected secretary of this association.

ALTHOUGH late in sending out his invitation, President Law addressed a very hearty one to the members of the Executive Committee to hold the next meeting of the American Veterinary Medical Association at Ithaca, N. Y. He held forth the great advantages from an educational standpoint that are possessed by the seat of Cornell University, and thought it would be extremely appropriate to meet at his home during the term of his administration. Kansas City had already been selected when the invitation was received.

WHISKERS—"MICROBE PARKS."—*Los Angeles, Oct. 12.*—The Southern California Veterinary Association has declared war on bewhiskered dairymen. If it has its way, caretakers, milkers and milk deliverers in this county will have to go clean shaven. In a paper, which was read before the association last night by L. W. Young, city veterinarian, whiskers were denounced as the favorite rendezvous and abiding place of germs. Legislation was demanded to force those who handle food to dispense with "microbe-harboring parks" on their chins. Long experience in making the rounds of the dairies has taught Dr. Young, he declared, that germs thrive on farms where milkers wear whiskers.

# REPORTS OF CASES.

*"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."*

## AN UNUSUAL CASE OF CANINE TOXEMIA.*

By P. A. FISH, L. S. BACKUS and WARD GILTNER, Ithaca, N. Y.

The subject of this case was a Scotch collie, six months old, weighing about 50 pounds, and of a highly nervous temperament. The history of the patient, as given by the owner, was that the dog was observed to crawl under a barn on the place, and as he did not return the next morning some of the boards of the floor were removed and he was discovered in a privy vault all covered with filth. He was removed and cleansed, but did not appear to be very well. A few days later he began to show symptoms of paralysis in the right hind leg, which condition gradually spread to the other leg. When brought to the clinic two weeks later (Oct. 30, 1905,) the dog was unable to stand and was in a helpless condition generally, although previous to his admission, treatment had been administered by a local veterinarian.

The first step in the treatment was the administration of calomel and sodium bicarbonate to open the bowels. An alterative or eliminative tablet, containing potassium iodide, syrup ferrous iodide, mercuric chloride, solution of arsenic and mercuric iodide and tincture of nux vomica was employed, to alternate with a tonic solution containing strychnine and quinine arsenate and extract of echinacea. A solution of strontium bromide was used for the nervous symptoms. An examination of the blood was made, and, although the red cells were about normal in quantity, the leucocytes were quite markedly deficient. To remedy this, 20 minims of nuclein solution (Parke-Davis) were injected hypodermically thrice daily. Improvement soon resulted; the leucocytes increased quite rapidly and there was also a slight increase in the red cells.

After ten days an abscess was noticed just in front of the scapulo-humeral articulation. The hair was cut from the red, fluctuating swelling and slight pressure was sufficient to break

* To have been read at the meeting of the N. Y. State Veterinary Medical Society, Buffalo, N. Y., Sept. 11-13, 1906.

it and discharge a thin bloody pus. A smear preparation as made from a hard lump of pus from the bottom of the abscess and rod-like organisms were found enclosed in capsules. The abscess was cleaned out with the tincture of iodine.

The following day the dog was in good spirits and able to use his legs to some extent. He also took milk from a basin and ate some dog biscuit. Previous to this he had been kept alive by administering milk in the form of a drench. At this time practically all treatment was dropped except the neuclein and this was given subcutaneously only once daily, in one dram doses, as the dog seemed to be very sensitive to the prick of the hypodermic needle. Laxatives and enemas of warm water were given when indicated and occasionally bromide for nervousness.

Five or six days later another abscess developed upon the right abdominal wall, and an organism, similar to the one obtained in the first abscess, was isolated from the pus. The temperature when admitted was 102.5° and this represented the average temperature during the period of treatment. The lowest temperature recorded was 101.5° and the highest 104°. The temperature rose from 0.5° to 1° a day or two previous to the opening of the abscesses, but fell back to 102.5° when they were discharged.

An examination of the urine showed that neither albumin nor sugar was present. The specific gravity was 1030; urea, 3.9 per cent.; phosphates, normal; chlorides, deficient.

After the first ten days, nuclein was practically the only remedy employed; a portion of the time it was given by the mouth, on account of the pain incident to the hypodermic injections. By the fifth week the patient was much improved and able to walk on all fours, but with some difficulty. The dog was taken out for a walk each day and the exercise caused improvement in his powers of locomotion. After a stay of about seven weeks the dog was regarded as convalescent, and it was hoped that he would continue to improve without treatment.

In a little over two weeks after his discharge, he was returned by the owner in apparently as bad condition as when first brought to the clinic, except that he was in good flesh. It was thought best not to continue treatment and the dog was therefore chloroformed a few days after his return.

The autopsy showed some hepatization of the lungs. Cultures made from the lungs were mixed in character. The liver was congested, and the cultures taken from this organ were

pure and corresponded in all characteristics with those previously obtained from the abscesses.

This case is reported, notwithstanding the failure of the patient to make a recovery, because of the unusual features. The cause of the affection was presumably the swallowing or absorption of some of the filth in the vault. The conditions seemed to especially indicate the use of nuclein. The favorable symptoms toward recovery we attribute to the nuclein more than to any other portion of the treatment. During the period of treatment the leucocytes had more than doubled in number and presumably protected the system by diminishing the number of organisms and perhaps decreasing the amount of toxin developed in the body. If the nuclein treatment could have been administered earlier or continued longer, it is within the realm of possibility that a complete recovery might have ensued.

## GALLOGEN AND DYMAL.

By W. E. A. WYMAN, M. D. V., V. S., Covington, Ky.

Acute and chronic catarrhal conditions of the domestic animals often are very unsatisfactory to treat. Many a high priced driver and draft horse becomes practically useless when afflicted with a chronic catarrhal state of the bowels. From time to time remedies have been given the profession which promised much, only to be discarded later on. The objection to most of them was found in the fact that they were acted upon by the acidity of the stomach, forming more or less stable compounds and thus interfering and molesting gastric digestion and at the same time exerting but limited astringent action upon the diseased mucosa of the intestinal tube. Tanniform has given fair results, yet many a pound has the writer prescribed in acute and chronic disorders of the bowels without any beneficial results whatever. At the same time tanniform has given the best results of all the therapeutic agents so far known until gallogen was first introduced by C. Bischoff & Co., 451 Washington Street, New York City.

Gallogen seems to have all the good points of tanniform, plus the fact that it contains almost 100 per cent. tannic acid, while the balance of intestinal astringents has from 40 to 50 per cent. only. It is probably for that reason that gallogen is more aggressive and returns quicker results.

The following cases exemplify the above:

1. Gray gelding, 5 years, ice cream delivery wagon; brick-

colored mucous membranes, decided tenesmus, slight colicky pains, a little tympanitic, anus relaxed, pulse bad, fæces foul and sour, watery, some blood, temperature 104.4. Gave in capsule 4 drams gallogen with 1 grain of strychnine. Four hours later 4 drams of gallogen. Three days later discharged as cured.

2. Bay mare, driver, four years old, has been washy for two years; chronic catarrh of large bowels. Ordered 2 drams of gallogen three times daily with the closest of diet. This animal consumed 1 pound of gallogen; has been without gallogen for four weeks; made numerous long distance trips and seems cured.

3. Roan driver, 12 years old, run down badly, bought at auction, no history, hind legs scalded from previous bowel discharges. Bowels sour, foul, food poorly masticated. Dressed teeth, being a "gulper"; arrangements were made to force the animal to eat slowly. Very strict diet. Gallogen 2 drams three times daily for one week. No results. Tanniform ʒ i, three times daily for one week, as a result of which fæces became a little mushy. Tanniform continued another week, same dose. No results. Discharged this case from hospital as incurable.

A great many other cases could be enumerated, but the above plainly show what can be safely expected of gallogen and proper regulation of diet strictly enforced.

The same conditions in dogs are promptly relieved by dose of 7 to 30 grains.

Dymal is recommended by C. Bischoff & Co. as a siccative antiseptic powder. There is no question that dymal is a reliable agent to dry a wound and stop suppuration, or to dry a larger surface wound and prevent suppuration; in all cases where the cheaper powders and dressings do not give satisfaction, the writer decidedly suggests the employment of dymal. In wet eczematous states of the heels of horses extending up along the tendons it quickly gives splendid results, while deeper fissures in the hollow of the heels following and accompanying (for convenience sake we will call it "scratches,") will heal rapidly and smoothly.

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"CHICKEN-POX, SORE HEAD OR CONTAGIOUS EPITHELIOMA IN POULTRY," is the title of Bulletin No. 136 of the Alabama Agricultural Experiment Station, and is from the pen of Dr. C. A. Cary, Veterinarian and Director of Farmer's Institute, Auburn, Alabama.

# SURGICAL ITEMS.

By Drs. Louis A. and Edward Merillat, Chicago, Ill.

## TRAUMATIC FACIAL PARALYSIS OF THE HORSE.

*Synonyms.*—Facial paralysis. Unilateral or bilateral facial paralysis. Paralysis of the facial muscles. Paralysis of the facial nerve. Bell's palsy.

*Definition.*—Traumatic facial paralysis as seen in solipeds is a partial or complete unilateral or bilateral vapidity of the facial muscles resulting from violent injury to the facial nerve trunk or some of its branches. The condition is one of considerable importance to the general practitioner of veterinary medicine because it is so frequently the result of careless management of a medical or surgical patient. Furthermore it is very frequently incurable and thus leaves the affected animal permanently deformed and less valuable. Especially from the etiological point of view it has not been described as conspicuously as its importance would warrant. In some text-books it is entirely ignored, no mention being made of its existence, in spite of the fact that the busy practitioner meets it with considerable frequency.

*Symptoms.*—All of the symptoms of facial paralysis are pathognomonic. It cannot easily be mistaken for any other disease. The manifestations vary only in degree—in the degree and extent of the paralysis. In the unilateral case the upper lip is drawn toward the opposite side owing to the paralytic condition of the muscles on the affected side. The under lip hangs limp at the affected side so as to expose the mucous membrane. The buccinator is more or less flaccid and the nostril is incapable of dilating as widely as before. In an aggravated case (complete paralysis of the affected side) these symptoms are very pronounced, prehension will be somewhat hindered and there will be impaction of food between the cheek and the molar arcades. While eating, unmasticated foods mixed with saliva will be seen falling continually out of the angle of the mouth. During inspiration the structures constituting the false nostril are drawn inward. If the inspiration is forcible the inward suction of the false nostril will obstruct the passage of air and produce a sniffling sound. Sensation is always undisturbed.

The *bilateral case* presents a somewhat different physiog-

nomy. Both the upper and the lower lips, both of the nostrils and both of the buccinators hang downward in a dangling, flopping condition. The lips hang some distance from the incisors as if they had been stretched. The inspiratory act is markedly impaired because neither nostril is capable of dilating and each false nostril is drawn inward with each inhalation. During exertion the sniffling sound accentuates and the obstruction may even threaten asphyxiation. The prehension of food in the normal manner is impossible. The patient will grasp solid food with the incisors and will show considerable difficulty in carrying it backward into the mouth, where much of it will lodge in the cheeks or again fall out into the feed-box. The ingestion of liquids is likewise hindered. The muzzle is pushed deeply into the watering trough and then with much difficulty only a limited amount of water is sucked into the mouth at each effort.

A case of unilateral facial paralysis. Photograph taken five minutes after injury was sustained.

Lateral view of a bilateral case of facial paralysis, contracted during a single night by lying against the halter.

Mastication is not otherwise disturbed, because the masseter is not dependent upon the facial nerve; the auricular muscles remain active, because their innervation is derived from the nerve trunk behind the seat of injury; and the eyelids are not paralyzed because only the orbicularis oris receives any impressions through this course. Ptosis is then not a feature of traumatic facial paralysis in solipeds.

*Etiology.*—Traumatic facial paralysis is caused by injury to the facial trunk. In almost every instance the injury is received at the point where the nerve trunk passes from beneath the parotid gland over the posterior border of the inferior maxilla to gain the outer surface of the masseter. At this point (the border of the jaw) it is very superficial, very much exposed to external violence and lies in close apposition to the hard and sharp border of the jaw. Externally it is protected only by the thin panniculus carnosus and the skin, so that a blow or a pressure will very readily inflict serious injury to the nerve trunk, which is thus caught between the wounding object and the sharp border of the bone beneath. The most common of all objects capable of inflicting such injury are the *rings of the five-ring halter.* These lie directly over the exposed part of the trunk at the level of the jaw. When sudden, forcible or constant pressure is brought to bear upon the halter shank the rings often squeeze the nerve trunk sufficiently to cause the paralysis. Sometimes the injury is sustained by *flying back violently when tied* in the single stall. In other instances it results from accidental contusion sustained in various ways, the most common one, perhaps, being the bruising of the parts during *recumbent surgical restraint,* when the assistant in charge of the head fails to prevent violent thrusts of the head upon the floor. On the *operating table* the accident is very liable to occur from traction upon the halter, which is generally secured through a hole in the table. This head restraint fixes the muzzle firmly at one point, while the body restraint admits of enough antero-posterior movement of the body to bring severe tension upon the halter shank and thus draw heavily upon the sides of the jaw.

A severe form of the disease issues from the recumbency of such diseases as laminitis, acute lameness, etc. In this instance the horse if tied is very prone to lie at the very end of the halter shank for hours, thus bringing a prolonged pressure over the region. A wide stall is more dangerous than a narrow one, as in the latter the horse can not as easily lie against the

stretched halter rope. A horse with laminitis, tied in a wide stall, with a five-ring halter is very liable to sustain the injury, and very often in its bilateral aspect.

Finally, a case might result from the accidental division of the nerve in surgical operation upon the region or from fracture of the ramus of the jaw near the articulation.

Facial paralysis, as a special isolated entity, is never of central origin in the horse, nor is that part of the nerve that is sheltered beneath the parotid gland and within the temporal bone ever injured or molested in any way to determine a paralysis. Hence the lesions must be sought in those muscles supplied by branches anterior to the posterior border of the jaw.

*Prognosis and Treatment.*—The gravity of the disease, that is, its liability to remain permanent, is strictly subordinate to the character of the injury. If the injury to the nerve trunk is irreparable the paralysis will be permanent. On the other hand, if the nerve is capable of regeneration, its elements rendered useless by the injury, functional restoration of the nerve will ensue and in turn the paralysis will yield to restored motion.

There is very little benefit derived from local or systemic treatment. The disease is one to be prevented rather than cured. Some cases recover perfectly in six weeks, others in two or three months, while others retain the defect through life. A coach horse that sustained the injury in its bilateral form by pulling violently backward in a dental halter, made a complete recovery in two months, although for a time the paralysis of the lips and nostrils were so complete as to threaten asphyxia when exercised. Other similar recoveries have been noticed. In spite of these fortunate results, in some instances, there are others that defy all attempts to palliate the symptoms.

NOTE:—Facial paralysis is of special interest to the veterinary surgeon, because it is a serious defect when permanent and because it may usually be traced to some avoidable incident in the surgical or medical treatment of the patient.

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COCAINE SOLUTION.—It has lately been proved that aqueous solutions of cocaine do not have to be sterilized by heat for their preservation if one centigramme of salicylic acid is added to each ten grammes of liquid. A similar preparation is recommended by the British Pharmacopœia, composed of: Hydrochlorate of cocaine, 15 grains; distilled water, 2 ounces; salicylic acid, 7 grains.—(*Therapeutic Gazette.*)

# EXTRACTS FROM EXCHANGES.

## GERMAN REVIEW.

By J. P. O'LEARY, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

INFLAMMATION A CURATIVE REACTION [*Prof. Dr. Zschokke*].—Inflammation, following a harmful influence upon the tissues, represents a protective and healing process, which has evolved in every animal by adaptation and heredity according to the position it occupies through its development. The inflammatory process deals principally with the elements of the middle blastodermic layer, the leucocytes, the connective, vascular, and nerve tissues. The process depends essentially upon the increased secretory and trophic (regenerative) cell activity, which are stimulated by the inflammatory irritation. The products of secretion, mostly enzymatic substances, effect in part the neutralization of poisons or the destruction of fungi, in part the cleansing of the tissues of cell remnants. The regenerative process aims at the formation of new or substitution of degenerated tissues, as well as the encapsulation of non-eliminable fungi or necrotic areas. As practitioners, we are eventually prompted by these consequences, not to combat the inflammation, but treat its cause. This curative process should not be disturbed, but favored, even stimulated.—(*Schweizer Ach. fur Tierheilkunde, Band XLVII., Heft 1 und 2.*)

MILK OF LIME FOR THE CURE OF TYMPANITES IN CATTLE.—Milk of lime is a favorite domestic remedy for tympanites in cattle. In this case the following interesting reports are substantiated by the steward Ch. Hauter-Speyer. He says that in the year 1870 he was superintendent on the demesne Neuhof at Hattenheim. After the outbreak of the war one shepherd with several other servantmen were called to serve in the army. A young inexperienced boy was given charge of the sheep, with the result that after the eighth day some sheep were found dead of tympanites. The superintendent was very anxious to learn what the nature of the gas was that had caused these deaths, and by a very simple experiment confirmed his suspicion that he had to deal with carbonic acid gas. A bottle may be filled with the gas in the following manner: place a bottle filled with water on the opening of the paunch of an animal dead of tympanites so that the gas may enter the bottle through a carefully

made puncture, thus driving out the water; placing the bottle mouth downward into the milk of lime, we observe at once how the mixture rises in the bottle and absorbs the gas, leaving only a few minute bubbles. From these experiments his conclusions were rapidly drawn. Immediately when cattle or sheep were found tympanitic they were given a quantity of milk of lime, about 7 grammes of freshly slacked lime for a sheep and about 35 grammes for cattle. The result was rapid in all cases, provided that the animal could still swallow. As the lime has a slight acid effect, we can better still use in its place the mild calcined magnesia, about 5 grammes for small animals and 20 grammes for the larger ones. However, he has never remarked any ill effects from the use of lime, and further attaches great value to its use, since we usually have lime always at hand, but not the calcined magnesia.—*(Illustrierte Landw. Zeitung, No. 8, 1906.)*

CONCERNING THE ETIOLOGY AND TREATMENT OF PARTURIENT PARESIS [*Prof. Dr. Hess*].—The term parturient paresis is a collective name for various pathological-anatomical septic morbid conditions, which possess the peculiarity in common, that they appear always some hours or a few days after calving and are characterized clinically by symptoms of depression and disturbance of sensibility. The cases of puerperal paresis described in the literature, which do not appear until some weeks after parturition, do not belong to this class; all these can be traced back to other causes (tuberculosis of the brain, gangrenous mastitis and so on). The disease appears most frequently in well nourished, stall-fed cows, preferably in those animals which belong to the families of rich milkers, particularly upon farms with the best juicy feed in the vicinity of towns. Cows which range in age from 5–8 years (that is, those which had calved from 3–5 times) are especially affected. Still, cows over 8 years old are sometimes stricken down; on the contrary, cows under 5 years old are rarely affected. The patients are particularly numerous among those cows which have been dry some weeks and that calved at the expiration of their full time or even those that have carried past their time which have calved easily and passed the after-birth without difficulty. The time at which the disease first makes its appearance varies between 1 and 96 hours after parturition; more frequently between 24–48 hours, until loss of appetite, constipation, suspension of rumination, unsteady gait, uneasiness, weakness across the loins, staggering and falling down, indicate the onset of the

disease. The symptoms are as follows: somnolence or coma, mydriasis, temperature 38–39 C., frequent pulse (70–90), respiration 24–36 or 24–12; pallor of the mucous membranes, subnormal temperature of the surface of the body, ears and horns; the head turned backwards, frequent ptosis; lagophthalmus, lachrymation, corneal insensibility, lack of animation, sometimes amaurosis, gurgling in the throat, groaning, foaming at the mouth, tympanites, udder always well developed and healthy, at most slightly œdematous. At no time was there a lochial discharge. Uterus insufficiently involved, skin insensible to pricking. Death ensues through paralysis of the heart or brain, usually peacefully and without pain. Post-mortem reveals anæmia of the brain, slight œdema of the lungs, œdematous infiltration of the vaginal mucous membrane, the uterine orifice dilated (admitting three or four fingers), infiltrated with serum and hæmorrhagic. The impregnated uterine horn measured 60–70 centimetres long and its greatest width 28–45 centimetres. The usual bruises and lacerations at the internal orifice may be very small. The course of the disease is variable, yet death may occur six hours after; in most cases 12–36 hours, and in exceptional cases 72 hours after the onset of the first symptoms. Recovery is announced by opening of the eyes, raising the head, moisture on the lips, eructation, urine and fæces are voided, attempts to rise, contraction of the pupils. Differential diagnosis: we must learn to distinguish between the paraphlegia after calving, the septic inflammation of the uterus, the dry necrosis of the pelvic muscles, the septic parametritis and uterine hæmorrhages. The prognosis was formerly unfavorable (40 to 66 per cent. were fatal); now 90 out of 100 cows survive. Animals which are found tubercular must be killed within 1–2 days. There are forms of the disease of the paraplegic type after calving which change to parturient paresis. All appearances, namely, subsensibility and somnolence, are present to a lower degree. Hess then describes septic metritis and emphasizes the fact that the changes in the uterus (lacerated wounds in the mucosa of the collum uteri, circumscribed phlegmon, infiltration of the uterine wall) sometimes are not so intense that they are in accord with the severe symptoms *intra-vitam.* The uterine serosa is either smooth or glistening or hyperæmic or covered with a fibrinous exudate. Subserous œdemas or hæmorrhages are rare. Puerperal septicæmia is differentiated from parturient paresis especially by the fever, 41.2 C. Post-partum paraphlegia (without complications) is

due to a minor aseptic simple bruising of the genital tract, especially the cervix uteri, and lasts from 36 hours to 5 days. A paralysis which continues longer than five days necessitates slaughtering the animal. Rupture of the gemelli muscles, bruising of the pelvic and other nerves (obturator nerves, sacral plexus, pubo-rectal plexus, ischiatic nerve). Fracture of the pelvis, especially the iliac bone, separation of the symphysis, fracture of the lumbar vertebræ, laceration of the sacro-iliac ligaments, muscular rheumatism, particularly the lumbar muscles, peritonitis, parametritis, mastitis, pachymeningitis, tuberculosis of the brain and the lumbar vertebræ, may also be the cause of post-partum paraplegia. The etiology of parturient paresis; the cause of this disease is nothing more than a traumatic wound infection. If it be aseptic, we are simply dealing with post-partum paraphlegia. If the wound becomes infected with staphlo and streptococci a toxæmia sets in; then we have the typical form of parturient paresis; when the infection is highly virulent, we have puerperal septicæmia with its fatal termination. The paresis is traced back to the pain caused by the injury. The toxines paralyze the vaso-motor centres through which the bloodvessels of the abdomen, particularly the uterus and the udder, are considerably engorged (the vessels of the udder will hold 10 litres of blood); this leads to anæmia of the brain. Treatment:—Laying the patient on the left side, the head somewhat elevated; caffeine subcutaneously, arecolin 0.06 grm., or pilocarpine 0.3 grm. both subcutaneous, rubbing the skin, constant nursing, emptying the bladder, covering over the abdomen, milking out the udder, filling up the udder with air or oxygen, 10–13 L., and afterwards massage. The later the disease sets in after parturition, the more successful the treatment. According to the statistics compiled by Hess, 90 to 95 per cent. affected recover. In the case of septic puerperal fever, disinfection of the uterus is of special importance, otherwise the treatment is the same as for parturient paralysis. For post-partum paraplegia the air infusion has proved likewise an excellent remedy. Hess has been able to cure all patients within 6 to 18 hours.—*(Deutsche Tier Wochenschrift.)*

CONTRIBUTION TO THE QUESTION OF THE BACTERIAL CONTENT OF MILK AND OF THE UDDER [*Brief report by Dr. D'heil*].—D'heil has attempted to examine both the milk and the udder as to their bacterial content along the following lines: the source of the bacteria in the milk, the influence of the method of milking upon the bacterial content (particularly

the examination of milk mechanically drawn), the result of straining upon the latter and the possibility of getting milk free from bacteria. The investigations of D'heil has had the following result: (1) With cows regularly milked and kept clean, usually there is no accumulation of dirt at the orifice of the teat, while the reverse is usually true. In the course of a few days a plug of dirt forms and the number of bacteria in it increase with its age. (2) In those udders containing milk we always find a column of the fluid in the canal of the teat. (3) The lactiferous conduits and galactopherous sinuses always harbor bacteria. (4) The bacteria found in the milk in the interior of the udder gain access through the orifice of the teat. (5) The glandular tissues of the udder contain bacteria, but only in reduced numbers. (6) The glandular tissues of the udder possess wonderful bactericidal power. (7) The first stream of milk is always richest in bacteria. (8) The large number of spores discovered in mechanically drawn milk, are undoubtedly due to the difficulty met with in thoroughly cleansing the apparatus. (9) Straining the milk does not decrease the number of bacteria. This process is recommended solely for the purpose of separating the filth from the milk.—(*Zeitschr. fur Fleisch und Milch Hygiene, XVI Bd., S. 84.*)

PERACUTE ŒDEMA OF THE GLOTTIS WITH FATAL RESULTS IN A COW AFFECTED WITH URTICARIA.—[*Dr. Wyssmann*].—Wyssmann found the following pathological anatomical lesions at an autopsy upon a cow, which the owner had supposed died of anthrax. The endocardium exhibited numerous large and small dark red to black hæmorrhagic spots. Lungs large and inflated, œdematous, bronchial ramifications contained long thin strings of mucus mixed with food, liver congested, spleen, stomach and intestines normal. The base of the epiglottis and the folds of its mucous membrane, the pharyngeal mucous membrane, the upper surface of the larynx, the adjacent mucous membrane of the pharynx and all the submucous tissue of the larynx formed an intense œdematous yellow, flabby mass. On section a small quantity of seromucous fluid escaped from the tissues without draining the parts thoroughly. The microscopic examination of these tissues, together with the spleen and heart, for anthrax bacilli, was negative. Laryngeal anthrax was therefore excluded. As a consequence the author concluded that he had to deal with a case of peracute inflammatory œdema of the glottis, which easily explains the sudden death through suffocation. As to the etiol-

ogy of the œdema, it was undoubtedly due to the urticaria, which was localized, especially on the mucous membrane of the larynx and pharynx.—(*Schweizer Arch. fur Tierheilkunde, Band YLVII, Heft 1.*)

THE TREATMENT OF CANKER OF THE FOOT WITH FORMALDEHYDE SOLUTION [*Dr. Schwendimann*].—The radical operation is usually the best of all methods for the treatment of canker of the foot. Aside from this, there are a large number of other remedies, but we do not know of a specific against canker. According to the opinion of many veterinarians, formaldehyde solution is superior to all other remedies in its curative action, and, as the author believes, it can even be substituted for the operation itself when the sole or the frog is affected; on the other hand, it must never be used when the wall is involved. When using this remedy it must always be remembered (1) that its application is indicated when the disease has not extended to the coronary band; (2) the proliferations should not be removed, as they are the best protection against the too deep action of the remedy. The parts should be touched once only, and then corresponding to the size and extent of the neoplasms; (3) if diseased areas remain after the scab falls off, due to cauterization, they should be carefully retouched with a 5–10 per cent. solution in order to save the healthy granulations; (4) 5 to 10 per cent. solutions can be used from the beginning, in which case tampons, held in place by an iron sole, are recommended; (5) as soon as the pain and lameness disappear, the horse should be put to light work, as regular exercise assists in recovery. The author, for sufficient reason, cites Möller's conclusions: "Not the remedy, but the doctor, cures canker of the foot." The result is also dependent upon the proper application of the remedy—.(*Schweizer Archiv. fur Tierheilkunde. Band XLVII, Heft 2.*)

## ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

VESICAL CALCULUS IN A GELDING—OPERATION—RECOVERY [*Mr. Dawson and Prof. J. F. Craig*].—This animal, eight years old, is a valuable hunter, which for the last two months has passed urine quite red and bloody. By rectal examination the presence of a calculus in the bladder was readily made out,

and it was at once decided to operate. After all necessary preparations and antiseptic measures were taken, the horse was thrown on the off side and chloroformed. An ordinary catheter introduced into the urethra facilitated the dissection and exposure of the urethra, and it was then opened with a longitudinal incision. The catheter was then removed and a metallic sound introduced through the urethral incision, when by the grating noise heard as it touched the stone the diagnosis was confirmed. Attempts were then made to dilate and enter the urethra with the fingers, so as to grab the stone, which was pushed backwards with a hand introduced in the rectum. These having failed, the introduction of a lithotome, then a lithotritor, were tried, but as the canal was too narrow to allow those instruments to go in, the operator decided to incise the roof of the membranous portion of the urethra intropelvic, which, when it was done, allowed the passage of the fingers and even the whole hand into the bladder. The removal of the calculus was accomplished without trouble. It weighed 9½ ounces, and measured 3 inches in width and 3½ inches in length. Recovery was without complication. The urethral incision healed in three weeks. —*(Veterinary Journal.)*

LARGE CYST OF THE OVARY IN A MARE [*Fred. Hobday, F. R. C. V. S.*].—The mare in which this condition was found had been suffering for some time with acute metritis. Taken with violent colic, she died with them, and it was at the post-mortem that the condition of the ovaries was made out. During her whole life the mare had never given any symptoms of ovarian trouble. The right ovary was enormous, as large as a cocoanut, and contained a very large cyst. The mass weighed 1 pound 14 ounces. The cyst contained 10 ounces of a clear yellow fluid. If ovariotomy had been attempted on this mare it would have been necessary to puncture and empty the cyst before the chain of the ecraseur could have been passed over the ovary. The left organ was cirrhotic, and weighed 3½ ounces. —*(Veterinary Journal.)*

DISPLACEMENT OF THE FIFTH UPPER MOLAR TOOTH IN THE NASAL CAVITY [*Prof. J. J. O'Connor, M. R. C. V. S.*].—This horse had an offensive purulent discharge from the right nostril. There was a large swelling covering the lower third of the face. The breathing was whistling. A diagnosis of malignant disease had been made when the author was asked for his opinion. In introducing the finger into the false nostril a hard and rough obstruction was detected, perhaps the cause

of the swelling of the face. The discharge is free from detritus of food. An operation was recommended. The false nostril being incised, a better view of the nasal cavity was obtained, and a more thorough investigation performed. With the finger a mass of food with a very disagreeable odor being removed, a hard body was felt; it was slightly movable, and was finally extracted with difficulty, it proving to be a molar tooth. The cavity it left was thoroughly cleansed of a mass of packed food. The fifth alveolus was found empty: the molar extracted was the one missing in the mouth. After a week it was necessary to trephine the frontal and superior maxillary sinuses to rid them of a mass of collected food. Irrigations completed the treatment. Recovery in two weeks.—*(Veterinary Journal.)*

INTESTINAL CALCULUS—LAPAROTOMY [*G. C. Lowe, M. R. C. V. S., and F. Hobday, F. R. C. V. S.*].—Aged 19 years, this mare has suffered with colics more or less for two years. One day she has a very severe attack. Her rectum is empty. By rectal exploration a calculus is felt in the pelvic curvature of the large colon, and as it is impossible to dislodge it, either by manipulation or irrigation, it is decided to operate. Being chloroformed, the region of the left flank is shaved, thoroughly disinfected and incised in the most elevated portion of the flank. The calculus is found embedded in the intestinal curvature, and notwithstanding all attempts, it is impossible to move it and push it into the widest portion of the intestine. It was also impossible to bring the portion of the intestine where it is close enough to the cutaneous wound to allow the removal of the stone by incision of the organ. Under such conditions the mare was slaughtered immediately. At the post-mortem the calculus was found surrounded by a mass of hard excrement. It weighed 6 pounds 6 ounces. This is the sixth case where the operation has been performed. All the cases were recorded in the *Veterinary Journal.* In one of them the animal died fifteen days after the operation from septic pneumonia.—*(Veterinary Journal.)*

A CASE OF MELANOSIS IN A CAT [*W. S. Mulvey, F. R. C. V. S.*].—An old cat had a running sore on the side of the chest. This sore rested on a tumor situated a few centimeters back of the elbow. From the sore there escaped a little discharge colored with pigment. From the main tumor there started a chain of smaller growths extending down to the axilla. The animal was in good condition and an operation was advised, with a prognosis rather reserved, the case being one of melanosis. The

cat was chloroformed and the tumor removed under all possible antiseptic precautions, notwithstanding which the cat died two days later. At the post-mortem were found gangrenous indications at the point of operation and general melanosis. The lungs were filled with little deposits of melanosis. The liver, spleen, kidneys, mesentery and lymphatic glands were all more or less affected. It is a wonder that the cat could, with such lesions, have lived in apparently good health and remained in good condition.—(*Veterinary Record.*)

FRACTURES [*James Smith, M. R. C. V. S.*].—Of course, "nearly all fractures are the result of direct external violence," yet how easily they can occur by muscular action only. The author to prove it records seven cases which he has seen in his practice. Case I.—A young stirk which, while playing in a yard, suddenly stops, bellows with pain, and blood squirting some yards away. He had a compound fracture of the off metacarpal bone. Amputation was performed, and, after six weeks, a stump was well formed. The animal was fattened and became so weighty that the other leg gave away. The beast was sold to a butcher. Case II.—A mare jumped out of the hovel in which she had been placed and sustained a fracture of the near fore pastern. She got well with plaster dressing. Case III.—An aged gray horse was jumping and playing in his box; he sustained a fracture of the coronet, and was destroyed. Case IV.—A horse shied at a piece of paper and suddenly became lame with a fractured pastern; shot. Case V.—Four-year-old gelding slipped on a piece of ice; fracture of the neck of the ilium; destroyed. Case VI.—A mare slipped with the off hind leg into a rut in the road. She went lame, but kept on her journey. She worked for three days after, then became lame with fracture at the middle third of the off femur. Case VII.—A cow trod on a small piece of stick, which flew up and scratched the inside of the tibia. She was very lame. Seen a few days later, she showed a swelling over the lower third of the tibia, with crepitation. She was treated for seven weeks and ultimately recovered.—(*Veterinary Record*).

OVARIOTOMY FOR TROUBLESOME MARES [*F. Hobday, F. R. C. V. S.*]—On previous occasions the author has recorded the histories of thirty consecutive cases of operations performed on troublesome mares with the results obtained. In the *Veterinary Journal* for April he gives the concise history of twenty others, and in consideration of the success he has met with, he presents the following conclusions: "Summarizing the fifty cases

referred to, it will be seen that, under chloroform, and strict antiseptic precautions, the operation of ovariotomy, although not of course free from risks, is one which can be performed with comparatively little fear of death from peritonitis, the great bugbear of old-fashioned surgery. For a major operation, it is really astounding how little constitutional disturbance takes place afterwards, even locally; and it must be admitted, looking at it from all points of view, that the operation of ovariotomy is well worth consideration before condemning an old favorite, or a previously useful animal to be shot on account of vicious habits which can be attributed to a diseased condition of the ovaries. Provided the animal is not very old, and, above all, has not acquired the persistent *habit* of kicking or otherwise making herself disagreeable, a glance at the above statistics will convince the most prejudiced observer that the operation is well worthy of a trial."—(*Veterinary Journal.*)

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DR. EDWARD C. ROSS, A. V. C. '84, New Haven, Conn., has sold his practice to Dr. James H. Kelley, of the same city, and retired from active work in the profession. Both of these well-known veterinarians were on the local committee of arrangements for the A. V. M. A. meeting of last August, Dr. Ross being chairman. We trust he may long live to enjoy his well-earned vacation.

GLANDERS AND SURRA DIMINISHING IN MANILA.—Under date of July 17, Dr. R. H. McMullen, veterinarian to the Bureau of Agriculture, Philippine Islands, sends the following item: "The members of the Veterinary Division who are stationed in Manila have just finished a vigorous campaign against glanders and surra. and I am pleased to chronicle the fact that upon the completion of this 'round-up,' which consisted of a thorough stable-to-stable inspection, that the city now contains fewer animals suffering from the infection of these two troublesome diseases than at any previous time since American occupation. The accompanying photo is that of the cutaneous form in a native pony which was included in the 'round-up.'"

# ARMY VETERINARY DEPARTMENT.

FORT RILEY, KANSAS, Oct. 2, 1906.

## WORK FOR THE BILL BEFORE CONGRESS!

*Editors American Veterinary Review:*

DEAR SIRS:—I wish to make some statements through the Army Department of the REVIEW in regard to Army legislation for veterinarians and I hope in this manner to get the views of others in the service through the medium of these pages upon this important matter.

The present bill which is before Cougress in all probabilities will not, in its present state, please us all, but in my opinion it will be a great improvement in many ways over our present law, and while many may be in favor of attaching amendments to this bill I would say if we undertake any such movements it will greatly retard its passage. One of our members recently in conversation with Senator Warren, who is Chairman of the House Committee, was informed that such action would probably prevent its passage at the coming session of Congress. He further stated that the bill would come up at the next session of Congress, but would not be reached until after the Christmas recess and that the chances of the bill becoming a law were very assuring, providing there were no changes made in the original bill.

If the veterinarians of the service can take the view that it is for the common good, and work together, I feel confident that with the aid of our colleagues in civil life, especially those of the American Veterinary Medical Association, we will see this bill become a law.

With this bill it seems like a great injustice that a portion of us must take an examination for reappointment, while others go in without any effort, providing they have fifteen years' service. Another injustice is the length of time we must serve with the pay of a second lieutenant. In the case of the surgeons of the Medical Corps, it is quite a strong contrast with their three years' service before obtaining a captaincy, as provided in their bill before Congress.

It seems that the staff in drafting this bill was either short sighted or indifferent in not providing for physical disability in line of duty for those now in the service.

I for one feel that if the bill will do good for the majority,

I am willing to submit to all these injustices and gracefully take what is given to me.

I hope to hear from others in the service through the columns of the REVIEW. CHAS. H. JEWELL.

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## INFLUENZA ANTITOXIN; ITS USE.

By L. E. WILLYOUNG, Fort Riley, Kansas.

"Time and tide wait for no man."

During the past few weeks, emergencies have arisen, requiring an immense number of horses for Army purposes, and, while suitable animals for the occasion may appear scarce, our states have infinite numbers to be secured at "stated prices".

It has devolved upon the Army veterinarian to assist in selecting and rendering such animals purchased fit for active duty.

This task is stupendous, requiring no little amount of energy and anxiety, as the source of such animals may be traced through various channels, farmer, local dealer, shipper, and, finally, the worst, a sale stable—the infective centre.

Railroad cars play but an unimportant part in the production of infectious diseases of the horse, in the Western states.

The following is a report of a few cases on which the antistreptococcic serum was employed:

*Case No. 1.*—Bay horse, aged 10, weight 1000 lbs.; condition good. August 11th, temperature 104, pulse 80, inappetence, discharge from nose, slight salivation, cough constant, inability to swallow food. Exposure to sun during day and elevated position of picket line, with cool nights, rendered variable temperature changes perceptible. Diagnosis: Acute coryzalaryngitis. Treatment: Ammonium chloride, fluid extract belladonna internally, three times daily, with soap and turpentine embrocation to throat externally. Diet: Hay, oats, bran, with grass and water in plenty. Progress: Daily improvement, gradual decline in fever; when, after remaining normal for several days, the horse was returned to duty August 24th. Severe field work followed.

During August 24 to 30, numerous new horses from East St. Louis arrived and were assigned to this organization, apparently healthy, but all infected with influenza, as usual.

September 9th, horse No. 1 presented the following symptoms: Temperature 105°, pulse 85, inappetence, great weakness; perceptible purpuric swellings, head, belly and legs; nasal

septum lesions. Treatment: Stimulants internally. Sept. 12, temperature still 104°. Thirty c.c. antistreptococcic serum administered hypodermically. Sept. 13, temperature 101°, appetite returned, rapid diminution in swellings. Weather extremely hot. Diet, hay, oats, green corn fodder. Sept. 19, discharged for daily exercise and returned to regular work on October 1st.

*Case No. 2.*—Private horse, weight 800 lbs., aged 5, recent arrival in camp overland from Kansas City. Diagnosis: Influenza complicated with strangles. Sept. 9, temperature 105°, pulse 70, great weakness and œdema of limbs, appetite fair. Stimulant treatment internally. Sept. 16, temperature 107°, pulse 75; appetite still fair; Sept. 17, temperature 102°, pulse 50; Sept. 19, temperature 104°, pulse 60, left lung pneumonic, embrocation to chest. Twenty-five c.c. antistreptococcic serum hypodermically. Sept. 20, temperature 104°, appetite better; Sept. 21, temperature 105°, 20 c.c. serum hypodermically; Sept. 22, temperature 104°, inappetence, heart weak, death. Post-mortem revealed double pneumonia with right and left pleural adhesions. (In this case the serum should have been used early in the disease).

*Case No. 3.*—Bay horse, aged 4, weight 1100 lbs., condition good; purchased at East St. Louis, Aug. 25, 1906. Sept. 29, strangles, opened pharyngeal abscess under left ear, applied poultices, temperature normal, appetite good. Oct. 3, temperature 103°, still eating well; Oct. 6, temperature 105°, 30 c.c. antistreptococcic serum hypodermically; Oct. 7, temperature 102°, 30 c.c. antistreptococcic serum hypodermically; Oct. 8, temperature A. M. 102°, P. M. 100.2°; Oct. 9, temperature A.M. 101.4°; Oct. 9, temperature P. M. 102°, 20 c.c. serum hypodermically; Oct. 10, temperature A. M. 101.4°; Oct. 10, temperature P. M 102°, 20 c.c. serum hypodermically; Oct. 12, temperature 101°, 20 c.c. serum hypodermically. This case, presented on Oct. 6, most marked purpuric conditions, a six-inch œdema under belly, legs swollen from hoof to body, nostrils almost occluded, but never lost appetite. On Oct. 14, swelling rapidly diminished, when on Oct. 18 the horse was turned into a paddock for daily exercise. Sixty grains of quinine were given three times daily to this horse during the entire length of sickness, beginning Oct. 3.

*Case No. 4.*—Brown horse, aged 4, weight 1150 lbs., recently from East St. Louis. Sept. 13, influenza, no complications. Treatment: Stimulants internally. Sept. 25, discharged for light duty, apparent recovery. Oct. 10, tempera-

ture 104°, pulse 70, abdominal œdema, hæmorrhagic nasal septum, very weak, inappetence, 20 c.c. antistreptococcic serum hypodermically; Oct. 11, temperature 100°, pulse 50, appetite returned; Oct. 13, temperature 100°, œdema disappeared, septum clear, in fact a healthy horse. No other treatment employed in this case.

*Case No. 5.*—Brown horse, aged 10, weight 950 lbs., condition good, returning from a 250 mile march. Oct. 10, temperature 104°, pulse 60, appetite good. Parotiditis, difficult respiration due to pharyngeal and laryngeal constriction. Surgical opening made through parotid gland, with escape of little pus. Poultice applied externally. Twenty c.c. antistreptococcic serum hypodermically. Oct. 11, temperature 100°, pulse 45, with exception of slight swelling under ear, which also disappeared in two days. This case was at once rejuvenated. Oct. 15th, horse is reported for duty.

*Case No. 6.*—Bay horse, aged 5, weight 1150 lbs., recently from East St. Louis. Entered hospital on Sept. 13, suffering from a severe attack of influenza, complicated with submaxillary adenitis. Treatment: Stimulants internally, also surgical interference to glands. Sept. 25, exercise in paddock, appetite poor, green feed secured and offered, but case gradually weakened, until Oct. 12 temperature rose to 104°, hæmorrhagic nasal lesions, with slight œdema under belly and hind limbs. Oct. 12, 20 c.c. antistreptococcic serum hypodermically. Oct. 13, temperature 100, appetite improved, new life apparent, turned in paddock again on Oct. 14. This case also consumed about sixty grains of quinine for ten days before the use of serum.

With one exception, the above cases either developed or presented convincing symptoms of purpura hæmorrhagica.

During the past two months this command has received 82 horses from East St. Louis, quite safe to assume from a sale stable infected with influenza.

All horses received here were either sick or soon became so, but 30 of the entire number were pronounced able to stand a march of 20 miles per day, for a period of 12 days, after having been here nearly six weeks.

The majority of these horses are "types" of Artillery horses, none weighing less than 1100 pounds; their cost, well, horses are high when sold to the War Department. Of the entire number about 10 suffered from mild influenza; these were antitoxinized, the disease apparently aborted, and they suffered no

further ill effect; others were given preventive doses of 10 c.c. serum, also no further illness.

The serum used was Pasteur's, in preventive doses 10 to 20 c.c., and in medicinal continuous 20 to 30 c.c. daily until conditions warranted its discontinuance. As to the result of this treatment, I am convinced, with previous experience, no ill effect follows its administration; it has virtue to abort or improve conditions, if used early.

Green food given to horses suffering with infectious diseases is like a physician's prescribed diet. Dry hay and oats placed before a sick animal?—let us call it quackery. Prevention still beats a pound of cure.

Purpura can be prevented or possibly aborted if taken at its inception, and the polyvalent serum deserves its advocates.

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DR. C. E. COTTON, Minneapolis, is enjoying a busy practice and has one of the finest and best equipped veterinary hospitals in America.

DR. J. N. GOULD, of Worthington, Minn., member of the A. V. M.A., has been President of the Nobles Agricultural Society for several years and recently served as Mayor of his city.

WHAT SCIENCE DID FOR CORN GROWING.—A private letter from Dr. W. H. Dalrymple, Louisiana Experiment Station, under date of Oct. 18, has the following interesting paragraph: "The Illinois Central and the Yazoo and Mississippi Valley Railroad ran a 'diversified Agricultural Special Train' through Mississippi and Louisiana, and had a lot of lecturers who made 30-minute talks on diversified agricultural topics at the different points on the schedule. The train was composed of a baggage car, diner, two day coaches and a sleeper. The day coaches were for lecture rooms, and the people crowded into them to hear the speakers, there being one in each of the coaches. I was out with the crowd for one day and made about eight points, shooting off a little 'hot air' at two of the places. Among the more prominent talkers was Prof. P. G. Holden, of the Iowa College of Agriculture, otherwise known as the 'corn man,' who has done so much for that state in increasing its stand of corn. It is claimed that this year he has increased the yield of corn 25,000,000 bushels, amounting to about $10,000,000. His plan really is to test by germination representative kernels from each ear of seed corn before it is planted, so as to be reasonably certain of its coming up and making a good stand over the whole crop."

# CORRESPONDENCE.

## TATTOOING COWS' EARS.

TREVOSE, PA., Sept. 28, 1906.

*Editors American Veterinary Review:*

DEAR SIRS:—Enclosed please find clipping from the *Jersey Bulletin*, Sept. 26.

Has any veterinarian any experience along this line?

Very truly yours, W. H. RIDGE.

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TAGGING THE COWS' EARS.—*A. G. Hollquist, East Norwich, L. I., N. Y.*:—I should like to be informed if tagging or labeling cows will have an injurious effect upon their points of scoring in judging at the fairs. *Reply*:—We should not think that the presence of an ordinary tag or label in the ear of an animal would in the least affect the scoring by the scale of points. Neither should the presence of a small hole in the ear where a tag had been, occasion any "cut" in the score. But if the tag or label has been torn out, and the ear split so as to disfigure the organ, it would detract from the "general appearance" of the animal and thus lower the score. We are reminded of the advantages of tattooing a number or other identifying device in the ear of an animal, which is practiced by some Jersey breeders. The most recent instance that came to our notice was at Overton Hall Farm, where each calf, shortly after birth, has its herd number tattooed on the inner surface of the ear, and Manager Gentry says that the plan is the most satisfactory he has tried. The characters, he says, are indelible, thus preventing any mistake as to the identity of a calf, and they are as easily read as the figures on a tag or label. The greatest advantage is that this method does not disfigure the ear in any way. —*(Editor).*

## A MILITANT CONSIDERATION OF BOVINE PARTURIENT PARESIS.

COVINGTON, KY., October 12, 1906.

*Editors American Veterinary Review:*

DEAR SIRS:—About 1902 the writer began to advocate the intramammary use of an antitoxin for the cure of this disease. Subsequent developments proved that the good results obtained by using the antitoxin were not at all due to the using of the writer's antitoxin, but depended upon the method of its appli-

cation. This revelation happened this way. While driving past a farm a request to treat a case of milk fever was extended. Since no antitoxin was on hand, the writer pumped the udder struttlingly full with a normal salt solution, placed the cow properly, gave general directions, and promised to return in about four hours, the farm being quite close to town. In three hours the message came over the telephone that the cow was up and what else was there to do. Right here the writer realized that the antitoxin was not a condition *sine qua non*, but that a pressure infusion creating intra and intermammary crowding was the essential factor in producing once more a normal state of affairs.

Following this the writer published the fact that the use of the antitoxin formerly advised was no longer requisite, and in its place a pressure infusion indicated.

Of all the theories as regards the etiology and pathology of parturient paresis, the one looking upon an autointoxication originating in the parenchyma of the udder is the most probable one. Some six years ago the writer drew the attention of the profession to the fact that in all probability one other or more diseases appear in cows during the period of lactation, simulating parturient paresis strongly. The mere fact that air, oxygen, K. I. solution, saline solution, give good results, even in those cases which one cannot accept conscientiously as cases of parturient paresis—pure and simple—ought not destroy the above assertion—the existence of a disease or diseases resembling parturient paresis. Five or six cases of parturient paresis met with in practice in a year will hardly permit of drastic criticism of the previous statement.

The general belief that primiparæ seldom if ever get parturient paresis has long since been exploded in our practice, in fact it is quite frequent. About two years ago the writer mentioned some important prognostic points to be considered in estimating the outcome of a case; reference is made here to the nature of the discharge contained in the uterus, state of the os uteri and the presence or absence of flocculous, gelatinous matter accumulated or adhering to the external os uteri. This disease presents itself in three forms—peracute, acute, and subacute parturient paresis. In the peracute form, the time which elapses between the first visible symptoms (such as weakness behind) and death rarely exceeds one to three hours. Three such cases have been met with. The acute form, unless complications occur, runs its course in two to forty-eight hours, showing a

maximum death rate of 10 per cent. with the accepted treatment of to-day.

There is but little doubt that a period of dryness predisposes to the trouble also; that the successful termination of the disease gives no immunity at all. As a result of the disease the milk undergoes changes consisting mainly in a decrease of its saccharine elements. The urine contains both sugar and albumen, while the temperature is about normal, provided no complications exist. In those cases where the disease sets in during the act of birth a case of dystokia is the result and artificial delivery becomes a necessity by reason of the cessation of uterine contractions. It matters but little whether air, oxygen, saline solutions, etc., are injected—a rapid and uneventful recovery depends on

1. Early injection.
2. Extensive filling of udder.
3. Retaining the injected material at least six hours.

Otherwise a relapse is very likely to follow, reports of which the current literature furnish from time to time. In a case of parturient paresis, pure and simple, it is not necessary that the attending surgeon remove the retained placenta at that time, although we often do it to appease the mind of an overanxious owner.

The statement made by some veterinarians, that the udder infusions irritate the glandular epithelium, thus increasing the flow of milk and ridding the body of the toxines, seems faulty —on the contrary, these pressure infusions have a paralyzing influence upon the parenchyma of the udder by stopping or at least materially decreasing mammary circulation, thus preventing the toxines formed in the udder from further entering the general circulation; in fact, one may safely state that the action of a pressure infusion is mainly a mechanical one. Parturient paresis, in the writer's opinion, represents an autointoxication, the toxines originating in the glandular epithelium of the udder, the vasoconstrictor properties of the toxines leading to an arterial cerebral anæmia, followed either by excitement or a comatose state. Azoturia of the horse shows quite some similarity to a parturient-paresis-like condition seen in milk cows fed heavily on brewer's grain. Simply looking at such a cow in the recumbent position, the superficial observer may conclude that it is a case of parturient paresis. This state is seen in fat, sleek, heavy milkers. The visible symptoms are those of a subacute or mild case of parturient paresis; but there is no

history of calving within a reasonable length of time, and if the name "parturient paresis" is to be a correct naming of that disease it ought to have something to do with the parturient state; such cases as referred to just now have usually been milked at least three months and are not with calf. Intestinal antiseptics, laxatives and stimulants as a rule remove the semi-comatose state at the latest in three days without employing udder infusions.

Speaking of azoturia a moment ago, the writer has followed a somewhat different line of treatment for some time which promises fair to develop into a more satisfactory one than the orthodox methods now employed by our profession—of this, more in due time. W. E. A. WYMAN.

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DR. J. G. ANNAND has moved from Minneapolis to Duluth.

THE VETERINARY DIVISION OF THE MINNESOTA EXPERIMENT STATION, under Dr. Reynolds, has received an additional appropriation this year of about $6500.

THE MINNESOTA STATE LIVE STOCK SANITARY BOARD has added still another field veterinarian to its force in the person of Dr. C. N. Hackett, a graduate of the Ohio State University, making four field veterinarians in addition to the secretary and executive officer, a veterinarian, and a bacteriologist, also a veterinarian—six in constant service.

HOMER DAVENPORT, the famous cartoonist, received at his stock farm at Morris Plains, N. J., Oct. 10, the largest importation of Arabian horses ever brought to this country. There were ten mares and seventeen stallions, and they are said to represent the only strictly desert-bred thoroughbreds imported into America. In fact, it is said by Mr. Davenport that they are the only "chubby" or horses the Aneza tribe will breed from that ever left the desert. Some of the animals were gifts from Arabian sheiks.

DR. JOHN J. REPP, of Philadelphia, Pa., late Secretary of the A. V. M. A., has abandoned veterinary for human medicine, in which he graduated at the University of Pennsylvania, two years ago. He has accepted a position with the United States Army as contract surgeon, and has been ordered from Philadelphia to Washington Barracks. The good will of the veterinary profession goes with him. He was a conscientious veterinarian and an excellent secretary, and his abandonment of veterinary medicine is a distinct loss to it.

# SOCIETY MEETINGS.

## PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting was held at Gettysburg, September 19, 1906.

The following members were present:—Drs. John L. Bradley, George W. Dunlap, Charles Falconer, W. H. Hoskins, Jacob Helmer, David Martin, H. D. Martien, M. Moriarity, A. R. May, R. T. Mumma, C. J. Marshall, Otto G. Noack, Leonard Pearson, J. W. Salade, W. H. Ridge, S. E. Weber, H. W. Witmer, I. W. Zellers. Visitors:—Herman Hoops, John J. Kenney, E. E. Seitz, W. N. Biggs, R. L. Kann, R. P. Feiser, J. W. Reigle, and S. C. Weamer.

During the forenoon the members and visitors, including the ladies, took a trip over the historic battlefield. The party of about forty were under the care of the famous Capt. James T. Long, who pointed out the interesting features and historical facts in connection with one of the greatest battles ever fought.

After dinner the meeting was called to order in the Court House by Dr. M. Moriarity. The President, Dr. F. F. Hoffman, was absent on account of sickness in his family. Roll-call and reading of the minutes of the previous meeting were dispensed with.

Dr. Leonard Pearson was called and gave an interesting talk on the subject of "The Latest Developments in Vaccination against Tuberculosis and the Value to Animal Husbandry of the Practical Application of This Method." Many questions were asked in reference to this subject, and carefully answered by the speaker. An interesting discussion of the subject was participated in by Drs. Noack, Bradley, Weber, and others. It was the consensus of opinion that the subject of immunization of cattle against tuberculosis is a most important question, and that we should follow carefully and thoughtfully the conservative example that is being prosecuted by the State Livestock Sanitary Board.

An interesting discussion took place in reference to the subject of meat inspection. It was urged that our system of local meat inspection should be strengthened in order to keep pace with the radical changes made by the federal inspection, which only gives protection to cities where Government inspectors are employed. In small cities all meats from inspected and non-

inspected slaughter-houses are sold with no assurance of being wholesome.

The following applications for membership were favorably recommended by the Board of Trustees and regularly elected to membership: John T. Kiethline, V. S., East Stroudsburg, Pa.; Abram H. Metzger, V. M. D., Millersville, Lancaster Co.; A. R. May, Boiling Springs. The following applications were ordered to be carried over to the March meeting and the applicants requested to appear in person before the Board of Trustees: Louis D. Sloan, V. S., Conneautville; W. H. Shaffer, Progress, Dauphin Co.; W. A. Cook, 1249 N. 28th St., Philadelphia; J. D. Clapper, Martinesburg, Blair Co.

The Secretary read a letter from Dr. George K. Swank, Mauch Chunk, tendering his resignation. It was regularly accepted.

The following letter from Dr. John J. Repp was read: "As I am out of veterinary medicine for the time being at least, I hereby offer my resignation from the State Association." Dr. Repp's dues are paid in full. It was regularly moved and adopted to accept Dr. Repp's resignation and place his name on the list of corresponding membership.

Dr. W. H. Hoskins, Secretary Pennsylvania State Examining Board, was called to make a report on recent work done by this Board. He reported that out of the 2,000 apparent registrations under the old law that 802 had registered with the present Board. Many were reported as dead, others had moved from the state, and some had registered illegally; 360 are unaccounted for. Dr. Ritter, Nazareth, Pa., was recently prosecuted by the Board for practicing illegally. Suit was brought at Easton and terminated in a victory for the Board, sentence being suspended and held open. If at any future time he should violate the law the sentence will be enforced in a fine of $100 and imprisonment. He also reported that many cases of illegal practitioners that had been reported to the Board, prosecution is delayed owing to the lack of time and money. The Board is making the endeavor to press the prosecution of a few cases for an early conviction, thinking that this will deter illegal practitioners from violating the law and relieve the Board from further effort.

The registration list will be published soon out of the funds of the Board, and each member of the Association will receive a copy. A few extra copies will be published and members of the profession can receive them at the cost of publication.

The meeting was adjourned at 3.30 P. M., to meet in Philadelphia, March 5th and 6th, 1907.

C. J. MARSHALL, *Secretary pro tem.*

## MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION.

The first meeting of this Association to be held in the summer since one held in Jackson, Sept 27, 1887, was called to order in Parlor 2, Griswold House, Detroit, Sept. 4, by President Jas. Harrison.

*Members present:*—Drs. T. H. Atridge, Harbor Beach; H. M. Armour, Litchfield; H. L. Bellinger, Plainwell; Wm. Coxe, Mayville; Geo. Fitchett, Caseville; Jas. Harrison, Maple Rapids; D. B. Allen, Sault Ste. Marie; D. Cumming, Port Huron; J. S. Donald, Bay City; C. L. Jones, Monroe; E. D. McQueen, Lowell; Geo. C. Moody, Mason; C. C. Mix, Coldwater; J. B. Stevens, Yale; Geo. Waddle, Kalamazoo; C. C. Stevens, Sandusky; C. A. Waldron, Tecumseh; W. H. Erwin, Howell; A. E. Alexander, Williamson; J. Black, Richmond; H. H. Clement, Hudson; C. C. Dauber, Sturgis; G. D. Gibson, Adrian; W. S. Hamilton, Chelsea; D. W. Curtis, Cadillac; G. W. Dunphy, W. L. Brenton, S. Brenton, J. J. Joy, Z. Veldhuis, Detroit; D. G. Sutherland, Saginaw; B. C. Smith, North Branch; R. W. McDonald, Flint; W. H. Wilkenson, Holly; Robertson Muir, Grand Rapids.

*Honorary Members:*—Dr. W. A. Giffin and Dr. Jos. Hawkins, Detroit.

*Visitors:*—Drs. Jno. Hooker, New Baltimore; M. R. Thynge, Charlotte; H. E. States, Detroit; M. R. Switzer, Milford; A. E. Joslyn, Pontiac; Cleveland (M. D.), Flint; A. L. Haggerty, Monroe; Jno. E. Wurm, Elkton; A. H. Moody, Three Rivers; A. C. Spencer, Fowlerville; Dawe (M. D.), Monroe; Attridge (M. D), Detroit.

*Ladies:*—Mesdames H. L. Bellinger, J. B. Stevens, W. A. Giffin, J. S. Donald, C. C. Stevens, S. Brenton, E. D. McQueen, J. E. Wurm, and others.

President Harrison said he had not prepared a regular address, but would say that he was glad to see so many representative veterinarians of Michigan present. As this meeting was to be social to a great extent, he asked the members to have a good visit with each other, and to make it pleasant for the visitors. From present indications this meeting would not be the

last of its kind, as much interest was shown to make this a success. He hoped to meet them all at the regular meeting in Lansing, Feb., 1907. Ex-President H. S. Smith tendered his resignation, but action was deferred until the regular meeting. A boat ride had been arranged for Sept. 5th to Bois Blanc Island, but on vote it was decided to call it off on account of our limited time.

The following made application for membership:

Dr. G. R. Switzer, Milford, O. V. C., 1890. Vouchers: J. Black, Jos. Hawkins.

Dr. Harry E. States, Detroit, Uni. of Penn., 1903. Vouchers: Jos. Hawkins, James J. Joy.

Dr. A. H. Moody, Three Rivers, O. V. C., 1885. Vouchers: Geo. Waddle, Jos. Hawkins.

Dr. Edmund Austin, Romeo, O. V. C., 1887. Vouchers: J. Black, W. A. Giffin.

Dr. John E. Wurm, Elkton, O. V. C., 1902. Vouchers: J. Black, C. C. Stevens.

The names were referred to the Executive Committee, who reported favorably upon all of them. It was moved and supported that the Secretary cast the ballot for the above named gentlemen. Carried. The ballot was cast as directed, and the applicants were declared elected, and introduced by President Harrison.

Dr. G. W. Dunphy gave an address upon the topic: "Some New Products and Their Use in Veterinary Practice." He spoke of adrenalin chloride, and said that it had much value as a hæmostat and local anæsthetic. It is prepared from the suprarenal glands of sheep. When used in combination with cocaine, not only is local anæsthesia produced, but the operation is practically bloodless. It has been used in purpura with good results, owing no doubt to its power of contracting the capillaries. Acetozone, another new product, has given very satisfactory results in scratches, grease and summer sores.

Dr. J. B. Stevens gave a talk on an interesting subject, "Influenza Antitoxin." He used the product very extensively in his practice during the past season and claimed to have had most satisfactory results. A number of cases were cited and the treatment seemed to be most promising.

In discussing Dr. Stevens' paper, Dr. Dunphy said that he had gotten what he considered very good results from the use of antitoxin in a car of horses he brought from Montana, both as a curative agent, and a preventive. Dr. Brenton said he

had used the antitoxin with indifferent results. The preparation under consideration is Dr. King's, manufactured by P., D. & Co. Dr. Attridge (M. D.) gave a very instructive and interesting talk upon uræmia and azoturia. He spoke of the similarity of the symptoms of azoturia in the horse and uræmia in the human and wondered if azoturia was studied with this idea in mind if some light could not be shed upon this disease the pathology and cause of which are so little known. The doctor advanced his theory in such a pleasant manner and his talk showed so much familiarity with the subject that his address was very much appreciated by the veterinarians, as it certainly gave some food for thought.

Adjourned to meet for clinic Sept. 5th, Veterinary Laboratory, Parke, Davis & Co. Sept. 5, 1906, met at 8.30 for clinic. Material was on hand for all the operations that were promised in the program, and the day was spent in looking over cases of obscure lameness that were awaiting the verdict of the expert diagnosticians, and operations performed were arytenectomy, neurotomy, castration and spaying. At 11.30 the ladies of the party met the gentlemen at P., D. & Co.'s dock, and took a launch to the Detroit Boat Club at Belle Isle, where an elaborate lunch was provided by Parke, Davis & Co. After lunch the party returned, and those who desired to do so, accompanied the ladies in a tour of inspection of the laboratories, the rest continuing the clinic.

The clinic, and the meeting altogether, was voted a grand success, and from the favorable opinions expressed by those who attended this meeting, summer meetings will continue.

J. BLACK, *Secretary.*

## VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The opening meeting for the winter of 1906–07 was held in the lecture-room of the New York-American Veterinary College on Wednesday evening, Oct. 3, at 8.30, and was called to order by President Roscoe R. Bell, with Secretary Mangan at his desk. There were quite a large number of members present, together with several visitors and students of the College. The President briefly reviewed the work of last winter and spring, and a recital of the many papers presented brought forth a realization of how much good can be done by such an association where the members attend and take active part in the pro-

gram. The interest and value of a number of the meetings were greatly enhanced by the presence of veterinarians and workers in the field of comparative medicine outside of the Association, who prepared papers, or gave demonstrations or talks upon topics of great interest to the profession. At the January meeting Dr. Leonard Pearson, of Philadelphia, entertainingly described the great International Veterinary Congress at Budapest, in which he took a prominent part. He took up the program of that convention, reviewing briefly each event, and altogether gave those present a rare treat. At the March meeting three excellent papers were presented: "Observations Made in the Diagnosis and Treatment of Parasitic Dermatitis of the Dog," by Dr. Frank H. Miller, of New York City; "Motor Stimulants in Horses," by Dr. E. A. A. Grange, and "The Official Veterinarian at the Horse Show," by Dr. F. C. Grenside. For April, Dr. Veranus A. Moore, of Cornell University, gave to the profession the first details of the agglutination method of diagnosing glanders, which was subsequently greatly enlarged upon by his contribution upon the subject to the last meeting of the A. V. M. A., and which has also been put to practical test in the laboratory of Dr. George H. Berns, of Brooklyn (a member of this Association), who also gave the results of his work at the New Haven meeting. Both of these papers were published in the October REVIEW. At the June meeting, Dr. Ira Van Giesen, of the New York Board of Health, gave a description and demonstration of a rapid method of diagnosing rabies by means of the Negri bodies, and he made the subject very plain, and interested everyone. At this meeting Dr. James L. Robertson, in conjunction with Dr. D. J. Dixon, of Hoboken, offered a case report of a horse which they had closely observed during life and upon which they jointly held an autopsy, finding an hypertrophied heart weighing 28½ pounds, which constitutes, so far as we know, the record.

These papers, together with others by Drs. Reid Blair, Robert Dickson, Wilfred Lellman and others constituted the formal programs, but by no means represent the scope and value of the meetings, for the "question box" and *impromptu* discussions filled in any extra time at the disposal of the members.

At the conclusion of the President's remarks, a paper by Dr. Wm. Sheppard, of Sheepshead Bay, entitled "Eczema: Clinical and Post-mortem Notes on the Case of 'Sysonby'," was read by the President. This paper had been prepared for the state

meeting at Buffalo, but the crowded condition of the program at that meeting prevented its presentation, and it was turned over to the REVIEW for publication. By arrangement with Dr. S., it was brought before the County Association, and, as there was present a veterinarian who had been called in consultation upon the distinguished patient, and as most all were more or less familiar with the circumstances of his illness and death, an intelligent discussion took place. The extreme hypertrophy of the liver (which weighed 65 pounds) seemed to be an inexplicable lesion, which gave no symptom during life of its presence, and the question remained unanswered as to whether the skin lesions were due to this condition, or whether the cutaneous trouble was responsible for that of the liver. Most of those who spoke upon the case were unable to account for the entire absence of digestive disturbance.

Dr. Simon Harger, of the University of Pennsylvania, had been announced as the guest and chief essayist of the evening, but he was unable to be present on account of a painful carbuncle. He has, however, agreed to fulfill the engagement at a future meeting.

Dr. George H. Berns was asked to give a further account of the practical working of the agglutination method of diagnosing glanders, which he and Mr. Cassius Way had been carrying out throughout the summer. It will be recalled that at the New Haven meeting of the A. V. M. A., in August he reported the results of 152 blood tests (see October REVIEW). He stated that the number had now increased to more than 300, and not one out-and-out failure had yet occurred. He spoke at considerable length, not only upon the subject of agglutination, but upon glanders in general, and remarked upon the great prevalence of the disease in the Borough of Brooklyn. Other members from that borough confirmed Dr. Berns' experience, and Dr. Ackerman (veterinary inspector of the Health Department), gave statistics which showed an alarming condition of affairs. The Manhattan members were then called upon, and their experience was similar to or even worse than those from across the river, one practitioner having encountered more than thirty scattering cases in his practice in the six previous weeks. Almost every one present entered into the discussion, which proved the most general and fullest which we can recall. The consensus of opinion was, that the situation called for vigorous action upon the part of the Department of Agriculture, as the Health Department was lacking in authority, which

ended when the danger to human life was exhausted. It was thought that the most effective system was that of compensation and destruction, which would bring to light all those animals which are now secreted, sold or disposed of otherwise than by killing, and which remain as propagators of the disease.

Further discussion upon the prosecution of illegal practitioners was indulged in, and the Secretary announced the receipt of a fifty dollar bill to be applied to the fund from Dr. P. Burns, who accompanied the munificent donation by the remark that if the Committee needed more he would give another fifty. The Association gave him a vote of thanks for his generosity.

A notable acquisition to the membership roll was received in the application of Dr. W. Reid Blair, veterinarian of the New York Zoölogical Park, who had been a regular and welcome visitor throughout the last session, and contributed liberally to the program both in papers and discussion, all technical pathological questions being referred to him, and he always took the greatest pains to comply, his facilities for pathological research being exceptionally good.

After some discussion of ways and means for increasing the usefulness of the meetings, and the best methods of securing a large attendance, the meeting adjourned, to meet on Nov. 7, at the same place. (R. R. B.)

## MASSACHUSETTS VETERINARY ASSOCIATION.

The regular monthly meeting was held at the Malden Veterinary Hospital, Wednesday, Sept. 26th. There were thirty-one members present and eleven guests. At 1 o'clock P. M. an interesting clinic was held. The following operations and cases were presented :

1. Double neurotomy, by Dr. W. L. La Baw.
2. Neurotomy, low operation, by Dr. Chas. H. Perry.
3. Diagnosis of lameness, by Dr. L. H. Howard.
4. Castration of ridgling colt, by Dr. W. M. Simpson.
5. Operation for chronic luxation of patella, by Dr. W. M. Simpson.
6. Removal of tumor on dog's ear, by Dr. W. T. White.
7. Autopsy on dog, by Dr. Thos. Maloney.
8. Sesamoiditis, fired and blistered by Dr. W. L. La Baw.
9. Cunean tenotomy, by Dr. Chas. Winslow.
10. Neurectomy for spavin, by Dr. W. M. Simpson.
11. Spavin, fired and blistered by Dr. E. C. Beckitt.

12. Exostosis of forward leg, fired and blistered by Dr. W. E. Peterson.

Lunch was served at 6 P. M., after which a business meeting was held. Dr. R. J. Marshall, of Williamstown, was elected a member of the Association. Adjourned 7 P. M.

F. J. BABBITT, *Secretary.*

## GEORGIA STATE VETERINARY MEDICAL ASSOCIATION.

The members of the veterinary profession in Georgia met Oct. 17, in the parlor of the Kimball House, Atlanta, pursuant to a call made by Secretary Willoughby, of the State Dairy and Live Stock Association, with twenty interested persons present. The object of the meeting was stated by Professor Willoughby, who was selected temporary chairman, with Dr. H. G. Carnes, of Atlanta, as temporary secretary. It was decided to form an independent veterinary medical association, composed of regular graduates of recognized veterinary colleges and to be officered with a President, Vice-President and Secretary. The following officers were elected:

President—Dr. P. F. Bahnsen, of Americus.

Vice-President—Dr. W. E. Carnes, of Atlanta.

Secretary and Treasurer—Professor C. L. Willoughby, of Experiment.

The President appointed a committee on by-laws and membership, consisting of Drs. C. R. Jolly, of Atlanta; T. E. Jago, of Athens; H. G. Carnes, of Atlanta; T. E. Lindsey, of Rome, and W. A. Scott, of Columbus, who retired and brought in a report accepting the following as charter members of the Association:

Dr. T. E. Jago, of Athens; Dr. J. N. Cook, of Atlanta; Dr. C. L. Willoughby, of Experiment; Dr. A. C. Seacord, of Atlanta; Dr. H. G. Carnes, of Atlanta; Dr. C. R. Jolly, of Atlanta; Dr. P. F. Bahnsen, of Americus; Dr. John E. Miller, of Gainesville; Dr. C. D. Coker, of Atlanta; Dr. T. E. Lindsey, of Rome; Dr. W. A. Scott, of Columbus, and Dr. W. E. Carnes, of Atlanta.

Motion was passed making State Commissioner of Agriculture Thomas G. Hudson and Assistant Commissioner R. F. Wright honorary members of the Association. It was decided to hold the next regular meeting of the Association at the Kimball House, in Atlanta, during holiday week, December 27, at which time a program of papers on veterinary topics will be

rendered, a veterinary clinic held, and additional members received.

Upon adjournment the members held an informal banquet and smoker in the dining rooms of the Kimball.

## AMERICAN VETERINARY MEDICAL ASSOCIATION.

### SOME RESULTS OF THE CLINIC.

Dr. Thomas Bland, of Waterbury, Conn., one of the Committee of Local Arrangements of the recent meeting at New Haven, writes under date of Oct. 17, stating that he is able to report conclusively upon the following cases operated on at the clinic:

Black gelding, roarer; operator, Dr. Williams. A decided success; simply marvelous. The subject was presented by Dr. Bland.

Gray gelding, cartilaginous quittor; operator, Dr. Geo. H. Berns, of Brooklyn. Decidedly successful; horse ready for work. Subject presented by Dr. Ross.

Roan mare, cartilaginous quittor; operator, Dr. R. C. Moore, Kansas City, Mo. Subject presented by Drs. Colton and Lyman, Hartford, Conn. Dr. Lyman reports that the horse is about ready to be put to work, proving the operation a decided success.

## SOCIETY OF THE VETERINARY ALUMNI OF THE UNIVERSITY OF PENNSYLVANIA.

A revision of the alumni catalogue of the Veterinary Department of the University of Pennsylvania is in progress. Every alumnus is earnestly requested to facilitate this work by promptly sending his full name, class and present address, to the Secretary. Also, send the names, classes and present addresses of all alumni whom you know, together with a list of deceased alumni. Do it now.

DR. B. T. WOODWARD, *Sec.-Treas.*
U. S. Bu. of Animal Industry, Chicago, Ill.

SECRETARY BARR, of the Illinois State Veterinary Medical Association, writes that the indications are that the annual meeting scheduled for Dec. 4 and 5, at Chicago, is going to be one of the best ever held by that association, as veterinarians throughout the State are showing unusual interest and he is receiving many letters relative to it and a goodly number of applications for membership.

# NEWS AND ITEMS.

DR. A. T. PETERS, Nebraska, has recently issued an interesting and well illustrated bulletin on "Malarial Fever of the Horse."

"DR. ATWOOD IN A NEW ASSOCIATION OF VETERINARIES [!] —INCORPORATES NATIONAL ORGANIZATION AT WASHINGTON—HIS NEW COLLEGE READY.—Dr. Frank G. Atwood, of Whalley avenue, returned from Washington, D. C., yesterday where he has been on business incidental to the incorporation of the United States Veterinary Medical Association. After attending the convention of the New York State Veterinary Medical Association in Buffalo recently, Dr. Atwood went to Washington, D. C., to look after the incorporation of the new association there. This association is a national organization and will shortly publish a national magazine devoted to the interests of the veterinary profession. Among the directors and trustees of the new association are such well known veterinarians as Dr. S. K. Johnson, of New York City; Dr. Finn, of Brooklyn, N. Y.; Dr. John T. Clares, of Buffalo, N. Y.; Dr. J. J. Maher, of Philadelphia, Pa.; Dr. Thomas W. Splankling, of Baltimore, Md., and Dr. C. Barnwell Robinson, of Washington, D. C. The articles of incorporation organizing and setting forth the purpose of the new national organization follow: 'We, the undersigned, being persons of full age, citizens of the United States, and a majority of whom are citizens of the District of Columbia, desiring to associate ourselves for the purposes hereinafter set forth, have this 26th day of September, 1906, made, signed and acknowledged this certificate in writing, as follows: First—The name or title by which this association shall be known in law shall be The United States Veterinary Medical Association. Second—The term for which it is hereby organized shall be perpetual. Third—the particular business and objects of this association shall be as follows: First—The investigation and suppression of infectious and other diseases of domestic animals. Second—The advancement of veterinary science and the fraternal benefits of the veterinary profession. Third—The membership of this association shall be composed of graduates of duly incorporated veterinary schools or veterinary colleges. The number of its trustees for the first year of its existence shall be: Elias S. Welmer, D. V. S. Seal; John Lockwood, D. V. S. Seal; C. Barnwell Robinson, V. S. Seal; Harry W. Acheson, D. V. S. Seal; Frank G. Atwood, V. S., F. M. S. C. V. S. Seal. City of Wash-

ington, District of Columbia, s.s.: Charles S. Hyer, a notary public in and for the District of Columbia, do hereby certify that John Lockwood, Elias S. Walmer, C. Barnwell Robinson, Frank G. Atwood and Harry W. Acheson, parties to the foregoing and annexed certificate of incorporation, bearing date of the 26th day of September, 1906, personally appeared before me in said district, the said John Lockwood, Elias S. Walmer, C. Barnwell Robinson, Frank G. Atwood and Harry W. Acheson being known to me and known to me to be the persons who executed the said certificate, and they acknowledged the same to be their act and deed. Given under my hand and official seal this 26th day of September, 1906. CHARLES S. HYER, Notary Public, D. C.' In speaking of the new organization last evening, Dr. Atwood said: 'The association will publish a magazine devoted to the veterinarian profession and will try to educate the profession in general on the point of advertising. At present there are some in the profession who imagine that it ought to be conducted on the same ethics as the medical profession. This is a false position entirely. Horses, dogs and cattle are bought and sold and the veterinarian profession is but a branch of the industry. The profession is in every sense a commercial one and there is no sense in the idea that the ethics of the medical profession in regard to advertising apply to the veterinarian. Not only will the new publication deal with the advertising issue, but it will take up all matters appertaining to the calling.' Dr. Atwood's plans for the opening of a veterinarian college of medicine in this city are nearly complete, and the school will commence work some time this fall. The new educational project will be known as the Connecticut Yale Veterinary College and a portion of the course will be identified with the Yale Medical School. The clinics and practical instruction will be given at Dr. Atwood's Veterinary Hospital on Whalley avenue, which is one of the best equipped institutions of its kind in the country. A large number of candidates have already made application for admission to the school."—*(New Haven Exchange, Oct.; 1906.)* [The above article is reprinted purely as a matter of news, and not by any means as an endorsement. This explanation would have been unnecessary if the REVIEW was not read outside of the United States, but in foreign countries the incident might be taken seriously, particularly as the name of an honored American university is mentioned in connection with the "college."—Editor REVIEW]

# VETERINARY MEDICAL ASSOCIATION MEETINGS.

Secretaries are requested to see that their organizations are properly included in the following list.

| Name of Organization. | Date of Next Meeting. | Place of Meeting | Name and Address Secretary. |
|---|---|---|---|
| American V. M. Ass'n..... | August, 1907. | Kan. City, Mo. | R. P. Lyman, Hartford, Ct. |
| Vet. Med. Ass'n of N. J..... | Jan. 10, 1907. | Jersey City. | W. H Lowe, Paterson. |
| Connecticut V. M. Ass'n..... | 1st Tu. Feb.,'07 | Hartford. | B. K. Dow, Willimantic. |
| New York S. V. M. Soc'y... | Sept., 1907. | New York City | G. T. Stone, Binghamton. |
| Schuylkill Valley V. M. A. . | Dec. 19 | Reading. | W. G. Huyett, Wernersville. |
| Passaic Co. V. M. Ass'n..... | Monthly. | Paterson, N. J. | H. K. Berry, Paterson, N. J. |
| Texas V. M. Ass'n... ..... | Call Exec. Com. | ..... | E. L. Lewis, Waxahachie. |
| Massachusetts Vet. Ass'n..... | Monthly. | Boston. | F. J. Babbitt, Lynn, Mass. |
| Maine Vet. Med. Ass'n..... | ..... | .... ..... | R. E. Freeman, Dexter. |
| Central Canada V. Ass'n..... | ..... | Ottawa. | A. E. James, Ottawa. |
| Michigan State V. M. Ass'n... | Feb., 1907. | Lansing. | Judson Black, Richmond. |
| Alumni Ass'n N. Y.-A. V. C.. | April, 1907. | 141 W. 54th St | W. C. Miller, N Y. City. |
| Illinois State V. M. Ass'n..... | Dec. 4-5, 1906. | Chicago. | F. H. Barr, Pana. |
| Wisconsin Soc. Vet. Grad..... | Call of Pres't. | Sheboygan. | S. Beattie, Madison. |
| Illinois V. M. and Surg. A.... | ..... | Decatur. | C. M. Walton Rantoul. |
| Vet. Ass'n of Manitoba ..... | Not Stated. | Winnipeg. | F. Torrance, Winnipeg. |
| North Carolina V. M. Ass'n... | ..... | ..... | C. J. Fleming, Winston Salem |
| Ontario Vet. Ass'n..... | ..... | ..... ... | C. H. Sweetapple, Toronto. |
| V. M. Ass'n New York Co.... | Nov. 7, 1906. | 141 W. 54th St | D. J. Mangan. N. Y. City. |
| Ohio State V. M. Ass'n..... | ..... .... | Columbus. | W. H. Gribble, Wash'n C. H. |
| Western Penn. V. M. Ass'n... | 1st Wed. ea. mo | Pittsburgh. | F. Weitzell, Allegheny. |
| Missouri Vet. Med. Ass'n..... | ..... | ..... | F. F. Brown, Kansas City. |
| Genesee Valley V. M. Ass'n... | ..... | Rochester. | J. H. Taylor, Henrietta, N. Y. |
| Iowa State V. M. Ass'n..... | ..... | ... ... .. | H. C. Simpson, Denison, Ia. |
| Minnesota State V. M. Ass'n.. | Jan. 9-10, '07. | St. Paul. | C. A. Mack, Stillwater. |
| Pennsylvania State V. M. A... | March 5-6, '07 | Philadelphia. | C. J. Marshall, Philadelphia |
| Keystone V. M. Ass'n..... | Monthly. | Philadelphia. | A. W. Ormeston, 102 Herman St., Germantown, Pa. |
| Colorado State V. M. Ass'n... | 1st Mon. in June | Denver. | M. J. Woodlifie, Denver. |
| Missouri Valley V. Ass'n ..... | January. 1907 | Kan. City, Mo. | B. F. Kaupp, Kansas City. |
| Rhode Island V. M Ass'n.... | June and Dec. | Providence. | T. E. Robinson, Westerly, R. I |
| North Dakota V. M. Ass'n.... | ..... | ..... | J A. Winsloe, Cooperstown. |
| California State V. M. Ass'n... | Mch. Je. Sep, Dc | San Francisco | C. H. Blemer, San Francisco. |
| Southern Auxiliary of California State V. M. Ass'n.... | Jan. Apl. Jy, Oct. | Los Angeles. | J. A. Edmons, Los Angeles. |
| South Dakota V. M. A..... | ..... | ..... | E. L. Moore, Brookings. |
| Nebraska V. M. Ass'n..... | ..... | ..... | Hans Jenson, Weeping Water |
| Kansas State V. M. Ass'n.... | Jan. 8-9, '07. | Topeka. | Hugh S. Maxwell, Salina. |
| Ass'n Médécale Veternaire Francaise "Laval,"..... | 1st & 3d Thur. of each month. | Lect. R'm Laval Un'y Mon. | J. P. A. Houde, Montreal. |
| Alumni Association A. V. Col.. | April each yr. | New York. | F. R. Hanson, N. Y. City. |
| Province of Quebec V. M. A... | ..... | Mon. & Que. | Gustave Boyer, Rigand, P. Q. |
| Kentucky V. M. Ass'n..... | ..... | ..... | D. A. Piatt, Lexington. |
| Washington State Col. V. M. A. | Monthly. | Pullman, Wa. | Wm. D. Mason, Pullman. |
| Indiana Veterinary Association. | Jan. 4-5. '07. | Indianapolis. | E. M. Bronson, Indianapolis. |
| Iowa-Nebraska V. M. Ass'n.. | ..... | ..... | A. T. Peters, Lincoln, Neb. |
| Louisiana State V. M. Ass'n.. | ..... | ..... | E. P. Flower, Baton Rouge. |
| Twin City V. M. Ass'n..... | ..... | ..... | S. H Ward, St. Paul, Minn. |
| Hamilton Co. (Ohio) V. A.... | ..... | Cincinnati. | Louis P. Cook, Cincinnati. |
| Mississippi State V. M. Ass'n.. | ..... | ..... | J. C. Robert, Agricultural Col. |
| Georgia State V. M. A..... | Dec. 27, 1906. | Atlantic. | L. C. Willoughby. Experiment |
| Soc. Vet. Alumni Univ. Penn.. | June 1907. | Philadelphia, Pa. | B. T. Woodward, B. A. I., Chicago. |

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